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Salla Rantala

The winding road from exclusion to ownership: Governance and social outcomes in contemporary forest conservation in northeastern Tanzania

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The winding road from exclusion to ownership:

Governance and social outcomes in contemporary forest conservation in northeastern Tanzania

Salla Elina RANTALA

Academic dissertation

for the PhD. (Forest Sciences) Degree

To be presented, with the permission of the Faculty of Agriculture and Forestry of the University of Helsinki, for public discussion in Auditorium XII, at the University Main Building, Unioninkatu 34, on Friday 8 March 2013, at 12 o'clock noon.

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Abstract

Tropical forest landscapes are subject to global conservation efforts as a source of public goods such as biodiversity conservation and carbon sequestration, while at the same time they are often of great value for local livelihoods in poor rural areas in the developing world. Failure to reconcile conflicting global and local interests has led to situations where the costs of both forest loss and conservation are borne most heavily by those least able to afford them. Following the growing recognition of the trade-offs between conservation and development, conservation approaches have evolved from fully exclusionary approaches (i.e. protected areas) to approaches involving varying degrees of local participation in forest management, strengthening local ownership over forests, and efforts to mitigate livelihood losses or create social benefits from conservation. This study contributes to understanding how the positive and negative social impacts of different forest conservation approaches are distributed within forest adjacent communities, and what kind of forest governance practices may be associated with the observed outcomes.

A mix of qualitative and quantitative social research methods was applied to assess the social performance of two forest conservation approaches implemented in the East Usambara Mountains, north-eastern Tanzania. The establishment of the Derema corridor was the focus of Studies I and II on the impacts and processes of compensated displacement from a forest protected area. Studies III and IV compared the outcomes and practices of Community-Based Forest Management (CBFM) to policy expectations of increased equity and effectiveness of forest management in the context of democratic decentralization.

The results suggest that displacement from the Derema corridor contributed to local social differentiation. Negative impacts were most felt by women and the poorest segments of the affected communities, due to restricted access to production resources in the conserved area and failure to access the monetary compensation intended to compensate for the lost assets. A minority of better-off farmers emerged as relative winners of the process by accessing considerable compensation and investing in improved livelihoods. The outcomes were conditioned by the procedures followed, marked by unpreparedness and disruptions in the presence of the implementing agencies, as well as the limited agency of local actors, especially women, in the negotiations over the conditions of conservation and compensation. The limitations of monetary compensation for the taking of resource rights and subsequent implications for the design of rewards for forest conservation services are discussed.

As a result of CBFM establishment, forest tenure security of local village communities has increased as per the policy expectations, but strict village forest rules preclude livelihood benefits. Some villagers have incurred costs from the establishment of village forest reserves through land appropriation. The outcomes of forest rights devolution in the East Usambaras may be seen as contextual path-dependent institutional reproduction that follows the previous exclusionary models of forest conservation, driven by civically and politically active village elites. Enhanced deliberative processes, access to accountability mechanisms, and increasing the awareness of procedural rights by all local stakeholders are central issues for improving the equity and sustainability of CBFM.

Key words: forest, conservation, community, decentralization, governance, access, impact

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Preface

Through my previous training as a biologist, I became involved in conservation and enchanted by the beauty, diversity and ecological importance of tropical forests. As many others who studied in the 1990s following the Rio Declaration on Environment and Development, I also believed that the people living adjacent to those forests were entitled to the same benefits from development, social equity and freedom that we were enjoying in my own country, and that such 'win-wins' for environment and development were possible to achieve. The first experiences in the field in the developing tropics were sobering, however, in terms of the myriad challenges related to coinciding the two in areas where international conservation interests and needs of the poor local population conflict. Since tropical forests have again gained prominence on the global policy agenda, especially in the international climate change negotiations, these concerns are more accentuated than ever. The social equity problems of forest conservation that have long intrigued me have been articulated as research questions and partially addressed in this PhD dissertation.

This dissertation is dedicated to the inhabitants of the East Usambara Mountains, Tanzania, who in their daily lives deal with the consequences of imperfect integration of conservation and local livelihoods in natural resource governance. I am particularly grateful to the villagers of Makanya, Antakae, Misalai, Shambangeda and Kwatango for their patience and trust in collaborating with this research, for repeatedly taking time off other chores to share their experiences with me and welcoming me to their homes, farms and forests. My special thanks go to Abduel Kajiru, whose professional and dedicated assistance in the field was instrumental for the achievement of the research objectives.

In the course of the work I was supported by a number of individuals, colleagues and friends in various organizations and different parts of the world. The research was started while I worked in the 'Landscape Mosaics' research project by the World Agroforestry Centre (ICRAF) and the Center for International Forestry Research (CIFOR); I am indebted to my former supervisor Prof. Brent Swallow who gave me the push to start the PhD and guided me during the first shaky steps of this journey. Similar thanks go to Dr. Laura German for her persistent advice and contributions throughout. The support of other colleagues at ICRAF and CIFOR, as well as the material and administrative support of these organizations, was fundamental. I thank Peter Minang, Joyce Kasyoki, Catherine Kimengu, Vanessa Meadu, Jean-Marc Boffa and others in our GRP6-ASB group for the collegial atmosphere; Aichi Kitalyi, Mariam Haule and colleagues at the ICRAF Tanzania office for continued support to my field trips; Ric Coe and Peter Muraya for help in research design and data management; Jean-Laurent Pfund and Terry Sunderland for collaboration and the chance to spend three months at CIFOR, Bogor, Indonesia, working on my data; Carol Colfer for advice and encouragement; Maria Brockhaus for the opportunity to continue building on my research in Tanzania, working with CIFOR; and other colleagues that I have not specifically mentioned. To the group of friends and colleagues that I came to know through research in the East Usambaras: thank you Heini Vihemäki, Emmanuel Lyimo, Jaclyn Hall, Renee Bullock, Bronwen Powell and Mwilla Mbegu for sharing the experience and keeping up the spirit. I also wish to thank colleagues in the Tanzania Forest Conservation Group, WWF and Muheza

district, especially Charles Meshack, Nike Doggart, Boniface Mtui, George Jambiya and Neil Burgess. I am grateful to the Tanzania Commission for Science and Technology (COSTECH) for repeatedly permitting my work in Tanzania. Support from the Ministry for Foreign Affairs of Finland to my work as an Associate Expert at ICRAF, as well as the funding from the Swiss Agency for Development and Cooperation to the Landscape Mosaics project, is gratefully acknowledged.

Both the Viikki Tropical Resources Institute (VITRI) and the discipline of Development Studies in the Department of Political and Economic Studies provided me an academic home at the University of Helsinki. Prof. (Emeritus) Olavi Luukkanen opened me the door to VITRI, and Prof. Markku Kanninen guided me through the last stages of the PhD process as the main academic supervisor. I am grateful to Prof. (Emeritus) Juhani Koponen for his contributions throughout the research process and for inviting me to the Development Studies group while I was in Helsinki in 2010-2011. Suggestions and comments by Prof. Koponen and the participants of the Development Studies PhD seminar were helpful in the development of the original research articles. Comments by two external reviewers of this dissertation are also gratefully acknowledged.

The last efforts of writing and finalizing the dissertation took place while I was a research fellow in the Sustainability Science Program in the Harvard Kennedy School during the academic year 2011-2012. I am indebted to Prof. Bill Clark and Nancy Dickson for this valuable experience and the important intellectual as well as material support to my work. The collegial support of the Sustainability Science fellows helped me through the final push; Angelica, Eben, Chico, Ram, Nazia and others – thank you for everything. The year at Harvard was made possible by grants from the Fulbright Center and the Finnish Cultural Foundation.

Last but not least, I wish to acknowledge the support of my family and all other friends not yet mentioned, such as my dear friends in Nairobi, Kenya, “who never knew me *not* working on a PhD” (that’s you Brian Harding). I have no words to express my gratitude to my parents for all their love and encouragement. Osku, thank you for bearing with me and standing by me in the final stressful moments. The second dedication of this dissertation goes to my grandparents Sirkka and Aulis Rantala – I am sorry I took too long to graduate for you to see it; I miss you deeply.

Helsinki, January 2013

Salla Rantala

List of original papers

This dissertation is based on the following original articles:

I. Rantala, S., Vihemäki, H., Swallow, B., and Jambiya, G. 2013. Who gains and who loses from compensated displacement from protected areas? The case of the Derema Corridor, Tanzania. Conservation & Society (Accepted).

II. Rantala, S., Vihemäki, H. 2011. Forest conservation and human displacement: Lessons from the Derema Corridor, Tanzania. In Mustalahti, I. (Ed.) Footprints in Forests. Effects and impacts of Finnish forestry assistance. Helsinki: Ministry for Foreign Affairs of Finland. Pp. 52-81.

III. Rantala, S., Bullock, R., Mbegu, M., and German, L. 2012. Community-Based Forest Management: What scope for conservation and livelihood co-benefits? Experience from the East Usambara Mountains, Tanzania. Journal of Sustainable Forestry 31(2): 1-21. DOI:10.1080/10549811.2012.725155.

IV. Rantala, S. and German, L. Legitimacy deficits, equity and effectiveness in Community-Based Forest Management: insights from Tanzania (Submitted).

In all the studies, Salla Rantala introduced the research idea, collected and analysed data, and prepared the manuscripts. In study I, H. Vihemäki, B. Swallow and G. Jambiya contributed to the research idea and the revision of the manuscript. In study II, H. Vihemäki contributed to the research idea, data collection, writing, and revision of the manuscript. In study III, R. Bullock assisted in collecting the socio-economic data, M. Mbegu planned and conducted the forest surveys, and R. Bullock and L. German participated in revising the manuscript. L. German contributed to the research idea and manuscript revision in study IV.

List of acronyms

CBFM	Community-Based Forest Management
CCM	Chama cha Mapinduzi, Party of the Revolution
CIFOR	Center for International Forestry Research
EUCAMP	East Usambara Conservation Area Management Programme
EUCFP	East Usambara Catchment Forest Project
FBD	Forestry and Beekeeping Division
ICDP	Integrated Conservation and Development Project
ICRAF	World Agroforestry Center
IUCN	International Union for Conservation of Nature
JFM	Joint Forest Management
MNRT	Ministry of Natural Resources and Tourism
NTFP	Non-Timber Forest Product
OECD	Organization for Economic Co-operation and Development
PES	Payments for Environmental Services
REDD+	Reduced Emissions from Deforestation and Forest Degradation
SIA	Social Impact Assessment
TFCG	Tanzania Forest Conservation Group
TZS	Tanzania shilling
VFR	Village Land Forest Reserve
WWF	World Wide Fund for Nature

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1. Introduction

1.1. Tropical forests, conservation, and livelihoods: the big picture

Twenty years ago, the UN conference in Rio de Janeiro drew the world's attention to the critical state of the ecosystems on our planet, and started global policy processes to address species loss, climate change, and desertification. At the centre of these efforts lies the conservation of tropical forests, home to some of the richest biodiversity on earth, and supporting a variety of ecosystem functions increasingly considered crucial for the survival of our own species. Although global estimates of volumes and values remain crude, it is safe to say that tropical forests are nearly unmatched among the world's biomes in terms of supporting climate regulation, carbon storage and sequestration, hydrological cycles and soil erosion control, in addition to their long-recognized benefits as a source of food, fuel, medicine, timber and other raw materials (Costanza et al. 1997, Sunderlin et al. 2005, Naidoo et al. 2008).

The role of forests for food security, human health, fuel, and shelter is most pronounced in poor rural areas in the developing world (Colfer et al. 2006, Arnold et al. 2011). Since poverty reduction was elevated to the top of the world's policy agenda with the adoption of the Millenium Development Goals in 2002, policy and academic debates have been marked by an increasing awareness of the intricate relationship between the dual objectives of tackling poverty and conserving the environment. Agricultural expansion and economic growth have benefited billions of people, but have been closely associated with forest conversion and loss (Sunderlin et al. 2005, CBD 2010), currently advancing at a rate of 13 million hectares per year (FAO 2010*a*) and accounting for up to 12-20% of total CO2 emissions (Van der Werf et al. 2009). Establishment of protected areas, the core approach to conserving the world's forests, has involved different degrees of exclusion of local people from resource access, bearing the risk of economic and social marginalization of forest-adjacent communities (Brockington and Igoe 2006, Sunderland et al. 2007). Failures to reconcile conflicting global and local interests in forest management has led to situations where the costs of both forest loss and conservation are borne most heavily by those least able to afford them.

The realization that not all forests and their people are equal adds several layers of complexity to the challenge. If there are often trade-offs between conservation and development, coinciding various forest conservation goals may also pose challenges. Optimal forest composition and spatial targeting of conservation activities may vary depending on whether the aim is to maximize biodiversity benefits or other ecosystem services (Chan et al. 2006, Naidoo et al. 2008). Different parts of a forest landscape perform different functions for local inhabitants (Sassen and Jum 2007, Pfund et al. 2011) and for different groups among those inhabitants, considering, for example, the needs of forest dependent hunter-gatherers versus agricultural frontier migrants (Sunderlin et al. 2005). Forest tenure conditions vary tremendously. Although over 80% of the world's forests remain officially under 'public' (government) ownership (FAO 2010*a*), forests are often subject to multiple overlapping claims. While lacking the authority and resources to effectively manage vast forest areas in the developing tropics, governments often fail to recognize customary access, use, and

management rights of local communities. Other entities *de facto* managing public forests include private companies through timber concessions and conservation organizations (White and Martin 2005, Agrawal et al. 2008). How an area becomes defined as forest in the first place, or not, depends largely on national circumstances (Sasaki and Putz 2009). Furthermore, with the advance of climate change, currently defined biogeographic forest boundaries are likely to shift in the future. Against this background, it appears clear that a diverse portfolio of governance instruments is required to effectively and equitably address both local and global interests in tropical forest management in dynamic contexts.

1.2. Forest conservation paradigms

The establishment of protected areas has long prevailed as the main governance instrument to sustain the stocks, environmental services and biodiversity of the world's tropical forests. In many tropical countries, protected areas, or forest reserves, date back to the arrival of European colonizers who aimed to secure natural resources to serve the development of their country of origin, often closing up forests from local inhabitants (cf. Woodcock 2002, Neumann 2004). This exclusionary approach has dominated global biodiversity conservation efforts until recently, stemming from a now largely refuted idea of pristine, equilibrium ecosystems that can only be preserved if entirely segregated from human presence and use (e.g. Adams and Hutton 2007). It is still seen as an essential part of the management tool box for sustaining the world's tropical forests (cf. Aichi Targets, CBD 2010, http://www.cbd.int/sp/), especially in relation to the growing interest in harnessing forests for climate change mitigation (e.g. Angelsen et al. 2009). Currently, officially protected areas such as national parks, game reserves and wilderness areas cover around 13% of the world's forested area; in the tropics of Asia, Africa and South America the proportion is higher (13-24%) than in Europe (4%) or North America (10%). Globally, the area of forest within protected areas has grown by 94 million hectares, at an average rate of 1.5% per year, since 1990 (FAO 2010*a*).

While the effectiveness of the world's protected area coverage in attaining the expected conservation goals is debated (Bruner et al. 2001, Chape et al. 2005, Hayes 2006, Campbell et al. 2008, Laurance et al. 2012), it is the equity side of things – the human impacts – that most criticism concerning exclusionary conservation has been directed at in policy and academic discussions in recent decades. Longer strands of discussion that had started to identify discomfort in the relationship between conservation and local livelihoods came to a head in the early 2000s, the period after which has been marked by a proliferation of studies, policy revision and contentious debates between conservationists and social scientists regarding the trade-offs between conservation and development (Adams et al. 2004, Brockington et al. 2006, West et al. 2006, Sunderland et al. 2007, Roe 2008, Agrawal and Redford 2009). Attention has been drawn to such negative human impacts of exclusionary conservation as the opportunity costs of forest protected areas as opposed to extractive and production land uses, human-wildlife conflict, and direct marginalization and impoverishment of local people due to displacement from protected areas (e.g. Brockington and Igoe 2006, Cernea and Schmidt-Soltau 2006, West et al. 2006, Coad et al. 2008, Agrawal and Redford 2009, Lasgorceix and Kothari 2009). The debates on the "purported or real" negative human impacts of protected

areas (Curran et al. 2009, Schmidt-Soltau 2009) have coincided with increasing attention to human rights in development and conservation, encompassing not only property rights but also procedural rights to participation and decision making (Campese 2009). These developments link to previous discussions concerning disenfranchisement of local people first by colonizers, then transnational conservation actors (Adams and Hutton 2007, Roe 2008), as well as conservation failures due to lack of local support (e.g. Ghimire and Pimbert 1997, Hulme and Murphree 2001 - but see Brockington 2003).

Although sometimes deemed an unproductive distraction from real efforts to reconcile conservation and livelihood needs (Brockington et al. 2006, Sunderland et al. 2007), the academic and policy debates have undoubtedly contributed to the evolution from fully exclusionary conservation approaches to approaches involving varying degrees of local participation in forest management and efforts to mitigate livelihood losses or create social benefits from conservation.

Among the first of these efforts were Integrated Conservation and Development Projects (ICDPs) in the 1980s-90s, in principle offering community development projects in exchange for conservation compliance. Widely criticized for falling short of delivering either conservation or development benefits (Kremen et al. 1994, Newmark and Hough 2000, Chapin 2004, Christensen 2004), the lessons from ICDPs did in turn influence further evolution of forest conservation approaches. Disenchantment with community conservation based on the early experience (Agrawal and Gibson 1999) led to calls for a re-evaluation of the role of exclusionary protected areas as the primary means of conserving tropical biodiversity (e.g. Brandon et al. 1998, Oates 1999), while some turned their attention to the development of market-based conservation mechanisms. Direct payments for conservation services between buyers (e.g., the international community) and sellers (e.g., local forest-adjacent communities) have been suggested to work better than indirect approaches such as the ICDPs (Ferraro and Kiss 2002). The idea of rewards conditional upon the delivery of conservation outcomes has since developed into a growing field of Payments for Environmental Services (PES) (cf. Wunder 2006, Engel et al. 2008, Swallow et al. 2009), including, most recently, Reduced Emissions from Deforestation and Forest Degradation or REDD+ (e.g. Angelsen 2008, Angelsen et al. 2009, 2012).

A number of international organizations that support conservation have also adopted principles, policies, and programmes addressing local people's rights and redress mechanisms in conservation-related displacement or restricted access to resources. Policies of international finance institutions and multilateral organizations such as the World Bank or the OECD specifically call for timely, adequate, and fair compensation for assets lost in conservation interventions (Cernea 2005, Siegele et al. 2009). Conceptually, compensation for conservation-related displacement differs from PES in usually being one-off rather than several conditional payments extending over a long period of conservation services delivery, and in being compensation for the permanent taking of resource rights that are formally re-allocated to a new rights holder, such as the national government in the case of state protected areas.

Criticism of the ICDPs by social scientists for failing because of being only superficially participatory and a continuation of top-down resource governance (Neumann 1997, Chapin 2004) coincided with an increasing emphasis on local participation in development theory and structural adjustment policies aiming at deregulation and decentralization since the 1980s (Roe 2008, cf. Chambers 1983, 1997), leading to further efforts to strengthen local ownership over forests. The feared resurgence of exclusionary conservation (Wilshusen et al. 2002) turned out to be short-lived at least in the forest sector, as a wave of decentralization of forest governance continued to sweep across many developing countries in Asia, Africa and Latin America (Colfer et al. 2008, German et al. 2010, Larson et al. 2010). The forest tenure reform (Larson et al. 2010) has ranged in different countries from the deconcentration of forest management powers from centralized state agencies to their sub-national branches, to democratic decentralization or devolution of bundles of forest rights to downwardly accountable local authorities, including those directly representing local forest adjacent communities (Agrawal and Ribot 2000, Ribot 2002). The decentralization processes have been driven by expectations of increased effectiveness of forest governance following decades of inefficient state forest management in many developing countries, and more equitable creation and distribution of benefits from forests, ultimately contributing to poverty reduction (e.g. URT 1998*a*, 2005). Internalizing externalities by assigning local owners or custodians to more forests is hoped to increase resource management effectiveness. Local coordination, knowledge, and labour may lower transaction costs and increase management efficiency. Bringing decision makers and arenas for decision making closer to constituents is expected to help better match the needs and aspirations of local people to resource management goals and implementation, making decisions more legitimate and more relevant to those whose lives they concern, in turn enhancing sustainability (Agrawal and Ribot 2000, Ribot 2002, Crook 2003, Smoke 2003).

As any paradigm, decentralized forest management has been met with as much caution and scrutiny as hope, especially in terms of its potential to result in sustainable forest conservation outcomes. Would enhanced formal forest access not result in forest clearance which is likely to offer quicker livelihood returns (e.g. Tacconi 2007)? Recently, a decade or two into the implementation of forest tenure reforms in many countries, assessments of the outcomes of forest decentralization have started to emerge. Large-N assessments based on quantitative data from various tropical countries appear to support the rationale of increased management effectiveness following decentralization: the security of community forest rights and local autonomy of rulemaking has been shown to be associated with effective conservation of forest biodiversity and carbon stocks (Chhatre and Agrawal 2009, Nelson and Chomitz 2011, Persha et al. 2011). Results regarding the local livelihood benefits and poverty reduction potential of forest decentralization have been mixed, and among case studies, frustration appears to outnumber success (Ribot et al. 2010). In their comparative study of 84 community forestry sites in six countries in East Africa and South Asia, Persha et al. (2011) found that 60% of the cases were characterized by trade-off relationships between biodiversity and livelihood outcomes, although jointly positive outcomes were more common (27%) than mutually negative cases (13%). In the aggregate, ‘win-win’ outcomes were strongly correlated with local rulemaking autonomy, supporting the assertion that a large number of cases in

which forest decentralization had failed to deliver the expected benefits could be attributable to incomplete or non-establishment of democratic decentralization (Ribot et al. 2010).

As different forest conservation approaches are developed and implemented, there has been relatively little empirical assessment in terms of which conservation approach brings the greatest social benefit or minimizes negative social impacts in specific social-ecological settings that vary a great deal across the tropics, within countries and across regions. The acknowledgement that forest conservation is always implemented within and conditioned by the complex reality of dynamic context-specific social-ecological systems has made some scholars wary of a small set of simple models or 'policy panaceas', such as protected areas or community-based forest management, as potential 'one size fits all' solutions. The models may come up short when confronted with the realities of particular cases, and it often cannot be prescribed up-front which approach – or a mix of them – would be optimal (Berkes 2007, Brock and Carpenter 2007, Ostrom et al. 2007). Still, most researchers tend to look at one forest conservation approach at the time when assessing their ecological or social performance in a certain context (but see e.g. Nagendra 2002, Persha and Blomley 2009).

A related concern is that studies striving to establish simple causality relationships between the different policy models and social and ecological outcomes of forest conservation often suffer from an under-conceptualization of the processes and factors that mediate outcomes, or apply relatively simplified understandings of the key social and ecological concepts (Leach et al. 1999, Wilshusen et al. 2002, Parkins and Mitchell 2005). For instance, the observation that communities that are affected by or participate in forest conservation consist of heterogeneous groups of actors, with important implications for the equity and effectiveness outcomes, made its way into the academic and policy debate early on (e.g. Agrawal and Gibson 1999). Still, policy documents and every day practices of forest governance continue to be rife with references to 'local communities', often aggregating them as a single stakeholder. The implications of the differences between local actors in terms of their social identities, resources, and livelihood strategies, as well as their relationships and roles regarding forests, still require further attention if the social and ecological performance of the various forest conservation approaches is to be convincingly assessed.

1.3. Research objectives

The studies that form this dissertation were focused on two conservation approaches implemented in the same forest landscape in northeastern Tanzania, characterized by strong international interests in protecting the endemic biodiversity of the forests and conflicting local needs to use the forest and land for livelihoods. The establishment of a new forest protected area, involving the displacement of local farmers and monetary compensation for lost assets, and Community-Based Forest Management (CBFM), in which village communities continued to manage forests on their own land, were assessed in terms of their social impacts and associated governance processes. A specific focus was on the distribution of positive and negative livelihood impacts among different social groups among the affected populations. Formal policies guiding the implementation of these conservation approaches were compared to the actual governance practices within the intervention contexts in order to

identify explaining factors that conditioned the processes leading to the observed outcomes. Figure 1 illustrates the foci of the four sub-studies and how they were related in a quadrate of objectives.

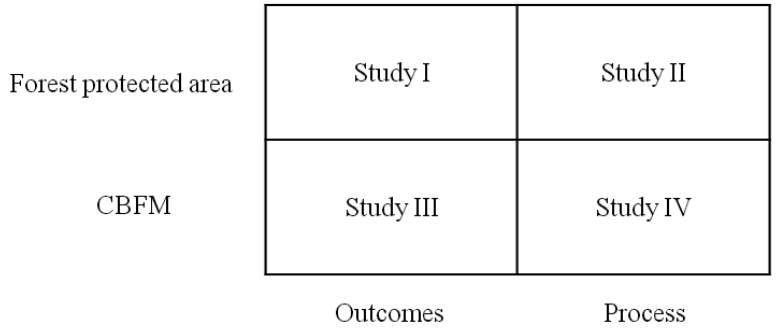

Figure 1. The foci of the four sub-studies that aimed to assess the social outcomes of forest protected area establishment and Community-Based Forest Management (CBFM) as well as to explain the governance processes that shaped the observed outcomes.

The general objective of the research was to inform the further design of forest conservation approaches so that they would more equitably and effectively reconcile local livelihood needs with conservation goals. The specific objectives were to

(1) Identify the social impacts of compensated displacement from a forest protected area, the intra-community distribution of the impacts among social groups characterised by gender and wealth, and the opportunities for successful post-conservation livelihood rehabilitation by the different groups (Study I).

(2) Understand how governance factors such as relevant institutional structures and the involved actors' agency conditioned the social outcomes of the conservation and compensation intervention (Study II).

(3) Assess how the policy expectations of democratic decentralization and associated livelihood benefits compare against the outcomes of Community-Based Forest Management (CBFM) in the East Usambara Mountains (Study III).

(4) Examine the intra-community processes of CBFM establishment to explain how local social and political dynamics have mediated the observed CBFM outcomes in terms of legitimacy, equity and effectiveness (Study IV).

The theoretical and conceptual framework of the study is presented in Chapter 2. The study context, including the broader institutional framework for forest governance in Tanzania, as well as the social-ecological context of the study site of the East Usambara Mountains, is described in Chapter 3. Chapter 3 also includes a description of the research methods used. The results of the different sub-studies are summarized in Chapter 4. Chapter 5 discusses the implications of the findings for efforts to develop forest conservation approaches that would more equitably address local livelihood needs in forest adjacent communities.

2. Theoretical framework

2.1. Conservation processes in complex social-ecological systems

An important underpinning for this study is the notion of tropical forest landscapes as complex social-ecological systems (Berkes and Folke 1998, or 'coupled human-environment systems', Turner et al. 2003) with various context-specific, interlinked, cross-scale and dynamic biophysical and social dimensions. This complexity means that it is practically impossible to establish linear causality relationships between a single conservation intervention[1] and social and ecological outcomes, or to develop models for action that would unfailingly produce equitable and effective outcomes. It has been suggested that in diagnosing multi-dimensional conservation and development problems, the analysis should be focused on identifying variables or attributes of a problem thought to be essential in the particular problem context, different interactions between these variables, changes triggered, and patterns of outcomes. Such an approach can maximize learning from the often surprising outcomes of those interactions (cf. Ostrom et al. 2007, Preskill 2009).

Hence, the current study grounds the assessment of forest conservation approaches in the context where they are being implemented, while at the same time linking them to theoretical models that can inform policy processes at multiple levels. Figure 2 presents a stylized model of the key concepts used in the analysis and their posited interrelationships based on current theory and literature. The theoretical framework of the study has been informed by bodies of literature on sustainable rural livelihoods, property theory and legal anthropology, democratic decentralization of natural resource governance, and deliberative governance.

[1] Intervention refers to activities or measures that are initiated to trigger a process to achieve a certain objective or set of objectives (Koponen 2004: 6), such as conservation goals.

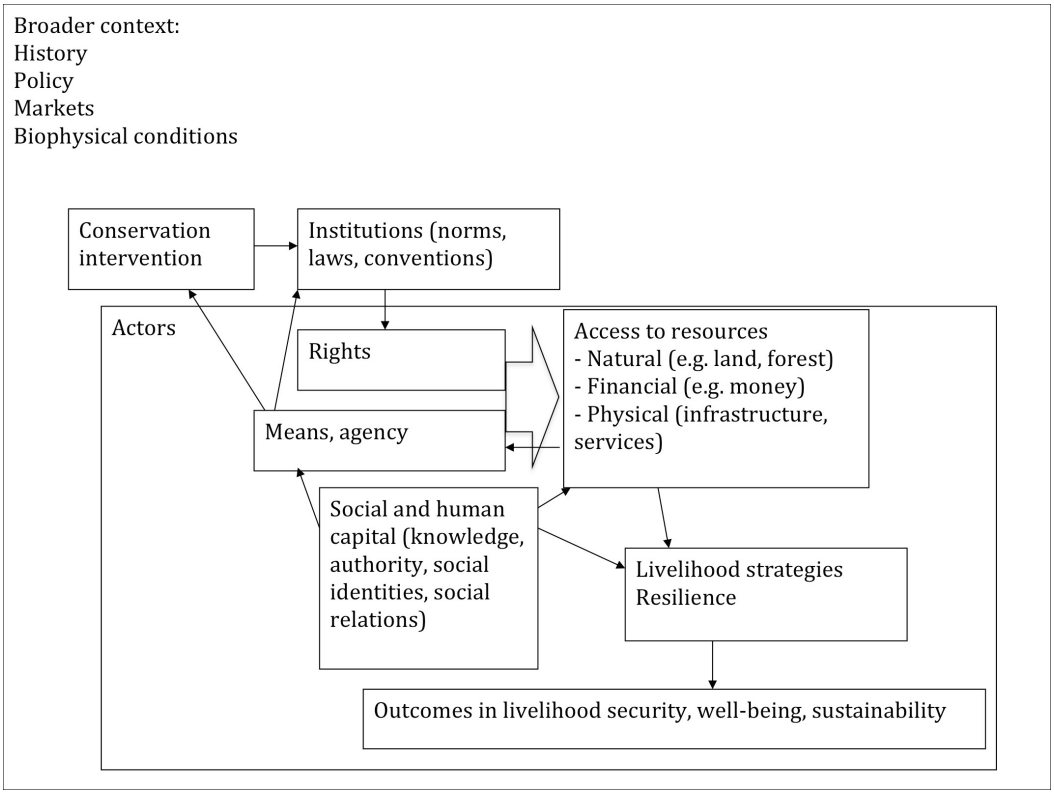

Figure 2. A model of the key concepts and their interrelationships for analysing social change processes triggered by forest conservation interventions (modified based on Figure 1 in Study I).

Study I applies the posited interrelationships of Figure 2 to analyse local livelihood outcomes following displacement from a protected area, and changes in access to resources and livelihood strategies. Yet, Figure 2 should not be understood as an attempt to capture linear change processes from a conservation intervention to livelihood outcomes, but analysis may be focused on the different parts and pathways of the conceptual model depending on the focus of interest – all the while it should be kept in mind that the proposed model, as any other, is an imperfect simplification of the various processes that may occur. Studies II and IV draw from the same conceptual framework in analysing the political dimensions of conservation processes, focusing on the interactions between relational structures (social capital), human agency, and institutions. In the following sections, the key concepts and their various theoretical linkages are defined and discussed.

2.2. Access: a function of rights and agency

Access to resources, such as forest and land, is a key factor shaping rural livelihood strategies and outcomes (Scoones 1998). In theorizing access, the current study follows Ribot and Peluso (2003) in defining it as the actual ability of actors to benefit from the resources at stake. The means and processes enabling access may be analysed separately.

Property rights, or tenure (Ribot and Peluso 2003), form an important component of access, indicating different types of social claims that authorize their holder to use, manage, and benefit from resources (Ribot and Peluso 2003, Sikor and Lund 2009). They only exist when there are institutions such as rules, norms, and conventions that define the relationship between rights holders and all others who must bear the duty of respecting the rights (Bromley 1991). Individuals and groups do not always hold a complete set of well-defined rights; rather they may possess varying bundles of rights, including the rights of access[2], withdrawal, management, exclusion, and alienation (Schlager and Ostrom 1992). The nature and characteristics of the bundles of rights as well as their security (including duration of rights) condition the claims of individuals and groups to resources and, as proposed by institutional economists, shape their incentives and actions in natural resource management, including investing in and maintaining the resources (Bromley 1991, Schlager and Ostrom 1992, Wiebe and Meinzen-Dick 1998).

Depending on whose hands the bundles of rights have been consolidated in, property rights regimes may be defined as private property, state property or common property. As opposed to private property held by individuals or corporations, a common property regime is characterized by a group of individuals holding rights to a resource in common. Often, the management authority is consolidated in the leaders or selected representatives of the group (Berkes and Farvar 1989, Bromley 1991). Following Hardin's "Tragedy of the Commons" (1968), common property regimes have been frequently confused with open access which, conceptually, refers to a situation in which there are no well-defined, socially acknowledged rights or rights holders, and resources are 'free' to be depleted by those who first get to them (Berkes 1989, Bromley 1991). The conceptual difference is important. While scholars have strived to identify conditions under which private property, state property or common property regimes may be sustainable (cf. Ostrom 1990, Wiebe and Meinzen-Dick 1998, Agrawal 2001), any of these regimes may become open access, and unsustainable, if broken down and not enforced (Bromley 1991). Such situations are frequent in the developing tropics when the capacities of the state to manage formally state-owned forest areas are not sufficient, or the state does not recognize common property regimes based on customary rules, making it difficult for local communities to exercise exclusion.

The differential recognition of rights based on statutory law, on the one hand, and those based on customary rules or practices[3], on the other, has been variously framed by scholars who recognize its important implications for access. Schlager and Ostrom (1992) refer to de jure rights, given lawful recognition by state authorities, and de facto rights that originate among resource users and are less secure than de jure rights until eventually recognized in judiciary settings. Locally originated rights, when formally recognized by different government levels and bound to a national legal framework (for example, rights defined by local forest bylaws formulated within a national policy framework) may also be considered de jure rights. When

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[2] In Schlager and Ostrom's (1992) conceptualization, 'access' means mere entry to a physical property; not to be confused with the broader definition of access central to this study.

[3] Defined here as self-organized rule systems rooted in the social experiences and shared histories of communities (Benjamin 2008).

formal rights exist, but other patterns of rights are followed in practice, the latter are considered de facto. Examples include non-application of national laws, informal access rights granted by government agencies to protected areas to ensure good relations with adjacent communities, and corruption and mismanagement in the allocation of rights.

Other scholars describe a situation where various legal orders exist independently, or are mutually ignored, as legal pluralism. Legal constellations conditioning rights include not only statutory and customary laws, but also, for instance, religious laws, international conventions, and institutionalized rules and practices of organizations and projects. These often exist in overlapping social domains (Griffiths 2002, Meinzen-Dick and Pradhan 2002). Legal pluralism is widespread in many post-colonial countries where local customary laws were first subordinated to the laws imposed by the colonizers, and the sovereignty of the state law was reinforced after independence. Yet, customary rules often continued to be followed locally. In some cases, they were recognized by and codified in the state law, sometimes involving reinterpretation or simplification of what customary law was (Griffiths 2002, Whitehead and Tsikata 2003). The decentralization processes in various countries have allowed the creation of new community-based institutions that in some cases have been designed by external agents and implemented at the local level (Benjamin 2008). The relationship between customary and modern decentralized institutions may range from ignorance to subordination to effective accommodation (Marfo et al. 2010).

Legal pluralist scholars stress that the various normative orders may co-exist at different levels with their own bases of validity and legitimacy, independently of state recognition (Griffiths 2002, von Benda-Beckmann 2002). An important observation is that actors may flexibly draw from different legal orders, depending on the situation, as the basis of their claims to a resource. These dynamics have been called “forum shopping” (von Benda-Beckmann 1981). In addition to the selective use of law, (re-)invention of custom has been documented as another way for actors to manipulate the discrepancies between various normative orders to promote their interests (Wiber 1990, Yngstrom 2002, Whitehead and Tsikata 2003).

The notion that property rights are dynamic and frequently challenged and re-created by actors in struggles for access (Meinzen-Dick and Pradhan 2002, Whitehead and Tsikata 2003, Nygren 2004), supports Ribot and Peluso’s (2003) conceptualization of access as more akin to a bundle of powers than a bundle of rights. Communities, such as those affected by or involved in forest conservation, are not static, rule-bound entities but consist of actors who actively observe, interpret and shape the world around them (Leach et al. 1999). They may strategically draw from their bundles of powers to promote their interests in claiming, controlling, and maintaining access to given resources. The strands in the bundles of powers are conditioned by the resources at the actors’ disposal, including knowledge, authority, social identities, and social relations (Ribot and Peluso 2003). They constitute various intermingled constellations of rights-based and other means and processes to gain and maintain benefit streams, with varying bases of legitimacy (cf. Sikor and Lund 2009). It is worth paying close attention to the use of the concept of ‘illegal access’. Following the legal pluralist perspective, it refers not only to enjoyment of benefits through ways that are not socially sanctioned by

law, but also through ways contradicting custom, convention or any institutionalized set of rules followed by a collectivity (cf. Meinzen-Dick and Pradhan 2002). Because the different types of rules are recognized to varying degrees by different actors, illegal access is not easily pitted against rights-based access as the polar opposite, as suggested by Ribot and Peluso (2003: 164), but needs to be carefully defined in each context.

Ribot and Peluso (2003: 164) also separate out "structural and relational mechanisms" of access, some of which in the current framework may be considered as part of the resources underlying bundles of powers (e.g. technology, monetary capital, labour; knowledge as part of human capital; and social identities and relations as part of social capital; Figure 2). Others, such as markets, are seen in this study as pertaining to the broader contextual framework conditioning access, including also the historical, policy and biophysical context (Figure 2; cf. Scoones 1998, 2009). Although different conceptual models variously organize the components of access, their interdependencies and mutual influences in dynamic contexts are usually emphasized (Ribot and Peluso 2003, Sikor and Lund 2009). That is, similar observations of dynamism concern bundles of powers as bundles of rights. They may shift over time, and change forms of access (Ribot and Peluso 2003: 154).

2.3. Agency, inequality and gendered access

To investigate the effect of human agency on forest conservation processes and outcomes, this study pays attention to the various strategies through which the bundles of powers may be operationalized in struggles for access, such as negotiation, bargaining, coercion – including discursive means – and sometimes also more hidden ways of action, such as non-cooperation or non-compliance (cf. Scott 1985, Ribot and Peluso 2003). A central observation for a study concerned with equity is that these struggles are usually shaped by largely unequal conditions for different actors to promote their interests regarding resources (e.g. Nygren 2004). There is always likely to be differences in the bundles of powers that different actors possess, conditioned not only by the structures and relations between rural communities and 'outsiders' that are often perceived more powerful (e.g. the state, Scott 1985), but also within the 'communities'. A growing number of studies looking into local natural resource management within communities find sub-groups, and then individuals within these subgroups, with varying preferences in and access to resource use and distribution (Agrawal and Gibson 1999). Attributes of social identity that may have significant implications for access include, for instance, age, gender, ethnicity, religion, status, caste, and profession (e.g. Ribot and Peluso 2003: 171, Agarwal 2010: 4).

At the sub-community level, studies on the outcomes of natural resource governance have commonly focused on households as the unit of analysis. A conventional conception of a household depicts it as a social unit which, in addition to consisting of individuals that usually reside under the same roof and share meals, acts in concert to decide over resource allocation and income pooling (cf. Ellis 2000: 18). Although it is acknowledged that households are sites of particularly intense social and economic interactions and interdependencies between individuals, the above conception does not always fully match the reality (Bruce 1989, Ellis 2000, Yngstrom 2002, Whitehead and Tsikata 2003). Some scholars suggest that kinship ties

are more important than cohabitance, with family members frequently residing elsewhere but remitting important contributions to the household. But family, often extended, is similarly complicated to define as a unit of analysis. Moreover, neighbourly, friendship, religious, and other ties within communities may be more important for the livelihoods of some actors than family ties (cf. Ellis 2000: 18).

A significant body of literature concerns the role of gender for access to land and other resources, especially in terms of how actor gender affects struggles for access in everyday practices of resource management. The mainstream conception of household as the unit of economic decisions has been argued to subordinate women as wives, sisters, daughters and widows to the decisions of 'household heads' in matters of resource allocation and livelihoods, with important implications for the findings of studies using such an approach and subsequently the way they inform policies, for example the practices of registering rural landholding (cf. Gray and Kevane 1999, Yngstrom 2002). Yet, the picture emerging from empirical studies is much more nuanced (cf. Rocheleau and Edmunds 1997), supporting the multi-faceted conceptualization of access underpinning the current study. For instance, there is evidence that the social embeddedness of women's land access in sub-Saharan Africa may work to either weaken or to strengthen gendered land claims, depending on the context and the dynamic bundles of powers that condition actors' agency (Gray and Kevane 1999, Yngstrom 2002, Whitehead and Tsikata 2003). In some cases, formal land titling processes have weakened women's access as their claims have been bypassed to the advantage of male household heads or other powerful local actors (Lastarria-Cornhiel 1997). These processes are likely to have been conditioned by previous gendered contestations and insecurity over land, resulting from differentiated positions which genders occupy within kinship systems that function as the primary organizing order for land access in some customary systems (Yngstrom 2002: 25, Whitehead and Tsikata 2003: 77). At the same time, the same systems may have provided women with diverse, complementary or alternative means to access land. Marriage is an important site of access, but women often also retain some residual land claims in their own kin groups as well as frequently obtaining land by loan, gift or purchase through a wider circle of social ties (Whitehead and Tsikata 2003: 78, cf. Woodcock 2002, Rantala and Lyimo 2011). An important reservation concerns the analysis of forest access using conceptions of property based on land. In some systems rights to land and trees correlate, such as in the customary practices of the Shambaa of the East Usambara Mountains, Tanzania (Woodcock 2002). In others, complex nested resource tenure systems may be found, with important implications for gendered access to forest and trees (Rocheleau and Edmunds 1997).

Studies have also paid attention to gendered exclusions in formal processes of forest governance in decentralized systems, and have found that they compound women's marginalization regarding resource access (e.g. Agarwal 2001, Bandiaky and Tiani 2010, Bandiaky-Badji 2011). Much less attention has been paid to the impact of women's presence on the outcomes for forest conservation and local livelihoods when they do participate (but see Agarwal 2010).

2.4. Inequality and forest collective action

In addition to equity in resource access and social outcomes, the effect of inequality on the effectiveness and sustainability of forest management has piqued the interest of scholars. So far, no easy correspondence between inequality and success of collective action (Baland and Platteau 1999, 2007, Varughese and Ostrom 2001, Poteete and Ostrom 2004), or between social homogeneity and sustainable resource use (Agrawal & Gibson 1999: 635) has been found. Studies that have attempted to identify these relationships have varied in the dimension of actor heterogeneity measured, the type of collective action considered, the criteria for success or sustainability, as well as the study context. Moreover, contrasting results have been interpreted and explained in varying ways, and often reverse causality cannot be ruled out (Poteete and Ostrom 2004, Baland and Platteau 2007).

Olson's (1965) ideas have been influential in proposing that a certain type of heterogeneity may be conducive for collective action if there is a small group or "critical mass" (Oliver et al. 1985) of better endowed actors within a community that bear the cost of initiating and maintaining collective action, such as community-based forest management. Wealthier users may be better able bear these costs, the time and other resources devoted to collectively organizing regulation and its proper implementation, including monitoring and sanctioning activities, dispute settlement, and rule revision. There is usually a minimum level of aggregate effort that has to be put in so that the desired management objectives can be achieved (Baland and Platteau 2007: 25).

Although economists have emphasized the existence of an economic elite that initiates collective action (cf. Olson 1965, Baland and Platteau 1999, 2007), this study draws attention to the implications of various types of heterogeneity that may exist within communities, following the multifaceted conception of access. Oliver et al. (1985) stress the importance of social relations for individual decisions to contribute to collective action. Social ties may provide opportunities for multiple incentives to participate in community forest management, overriding immediate individual economic constraints (cf. Marwell et al. 1988). Moreover, there is likely to be heterogeneity of interests regarding the resource (Ostrom 1990), which may complicate the achievement of collective action if the interests of users differ substantially (Varughese and Ostrom 2001). The nature and extent of women and men's interests regarding forests may be distinct (Agarwal 2010). The time horizons of resource interests of actors may similarly differ, favouring distinct action (e.g. prompt exploitation vs. deferred use, Baland and Platteau 1999). There may be variation in the availability of alternate sources of resources to different actors (Varughese and Ostrom 2001: 749) as well as locational differences, i.e. distances of different users from the resource, which may also affect their interests and motivation (Varughese and Ostrom 2001, Poteete and Ostrom 2004).

Varughese and Ostrom (2001) suggest that the probability of resource users to self-organize – to establish and sustainably maintain institutions that specify rights and duties with regard to a common good (Ostrom 1990) – in the case of socially heterogeneous groups is conditioned by authority, trust, interpretation of rules, and reciprocity among the group members. In practice, the responsibility to enforce rules is often vested in a local authority, such as a local

government or a village natural resource committee, on behalf of all users. These observations draw attention to another dimension of heterogeneity that may have implications for collective action, as suggested by Vedeld (2000: 108): political heterogeneity, or the degree of agreement on the legitimacy of leaders and institutions.

Varughese and Ostrom (2001) and Poteete and Ostrom (2004) further state that although heterogeneities may pose challenges for collective action, these may be overcome by appropriate institutional design. This suggests that the processes through which community forestry institutions are established are of crucial importance for the sustainability of regimes. The autonomy of rulemaking is increasingly agreed to be a determining characteristic for the outcomes of these processes (Ostrom 1990, Persha et al. 2011). This study also pays close attention to the legitimatizing practices in institution formation and constitution of authority (cf. Sikor and Lund 2009).

2.5. Forest governance and the constitution of legitimacy

Various conceptions of legitimacy have been put forth in relation to different types of governance regimes, and scholars only appear to agree on it being a multifaceted concept (cf. Dogan 1992, Kronsell and Bäckstrand 2010). At the broadest level, what may be called political legitimacy refers to the acceptance of and the authority granted to particular social structures by a specific community. A specific form of legitimacy that this study is concerned with, normative legitimacy, relates to governance as it conforms to the values, norms and principles of the community. In liberal democracy, such principles may include transparency, rule of law, fairness, inclusion, participation, representation and deliberation (Scharpf 1999, Kronsell and Bäckstrand 2010). Institutions do not automatically embody legitimacy, but it has to be established. Hence, what is considered legitimate varies between and within cultures and over time, and is continuously (re-)established through conflict and negotiation. Drawing from their bundles of powers, actors actively employ different concepts in their attempts to legitimate various political interests and initiatives (cf. Sikor and Lund 2009: 7).

In evaluating the processes through which new forestry regimes are created, this study borrows from Scharpf (1999) who suggests examining the legitimacy of political processes through breaking the concept down to input legitimacy and output legitimacy. Input legitimacy is concerned with evaluating the transparency, inclusiveness, and accountability of procedures in planning, decision making and rule making. Output legitimacy, in turn, asks whether the plans and decisions result in collective problem solving and performance (cf. Bäckstrand 2006, Kronsell and Bäckstrand 2010: 39).

The apparent paradox in the approach of recognizing the fluidity and context-specificity of legitimacy, while simultaneously applying concepts based on seemingly Western notions of normative legitimacy to assess it, warrants explanation. It may be rightly questioned whether the concepts of input and output legitimacy, as defined above, are appropriate analytic tools in the African context (cf. Schatzberg 1993) where pluralist legal orders are rife due to historical co-existence of colonial and customary socio-legal systems and more recently, emergent forms of multi-actor governance as a result of decentralization and development projects.

While attention is paid to the effects of legal pluralism on local notions of legitimacy, the use of input and output legitimacy as analytic tools is justified by their close connections to the theoretical underpinnings of democratic decentralization, and more broadly, to the participation discourse in conservation and development. Such an approach may be fruitful in exploring how the expectations of improved performance of forest governance following democratic decentralization, or ostensibly participatory forest conservation interventions, play out in legal pluralist contexts.

In assessing the input legitimacy of the forest conservation processes, this study focuses on three elements (cf. Beisheim and Dingwerth 2008, Kronsell and Bäckstrand 2010): inclusive, equal and representative participation; deliberative quality of the process; and accountability. The equitable inclusion of a broad range of stakeholders in decision-making processes is posited to increase the ownership over decision making through participation, leading to increased support to the decisions (Beisheim and Dingwerth 2008: 13). The sustainability of common pool resource management is suggested to be enhanced through the inclusion of many of the affected individuals and groups in the negotiation of resource harvesting and protection rules (Ostrom 1990). Dynamic processes of deliberation – inquiring, arguing and learning together, including persuasion free of coercion (Manin 1987) – are increasingly seen as a fundamental component of democratic representation (e.g. Urbinati and Warren 2008). Based on transparent argumentation and consideration of alternative actions from various relevant angles, decisions are more legitimate, although not necessarily unanimous (cf. Manin 1987). This may be assessed as the "deliberative quality of opinion and will formation" (Beisheim and Dingwerth 2008: 14). Transparency in information sharing, along with awareness of legal rights and procedures, and mechanisms for redress, such as access to courts and mediation, is also important for accountability (Ribot 2002, Beisheim and Dingwerth 2008). Accountability concerns both the answerability of decision makers, i.e. their obligation to provide information and explanations concerning decisions and actions, as well as the ability of constituencies to oversee the decision makers, apply sanctions and seek redress if the answers are unsatisfactory (Ribot 2002: 29).

2.6. Livelihood strategies, resilience and outcomes

What may be considered the outcomes of dynamic, multi-actor governance processes, represent snapshots of the reality at a given point in time, from the chosen angle of evaluation, which tends to specific to cultures and organizations. Social and environmental impact evaluations hence seldom produce 'absolute truths' (Preskill 2009). The concept of 'impact' used in Study I is borrowed from Slootweg et al. (2001), meaning something felt or experienced in a physical or cognitive sense, whether at the level of individual, household, or community. This approach allows identifying both outcomes which are particular to the aspirations of actors in the local socio-cultural context, as well as measuring outcomes relating to certain internationally accepted indicators of well-being. Impacts are also understood as often unintended outcomes that unfold over time, at any stage of a conservation intervention, as opposed to effects attributable to an intervention in a logical framework type of thinking, detectable only in the formal end of a process (Koponen and Mustalahti 2011).

The current conceptualization of livelihoods relates to theories on sustainable rural livelihoods (Chambers and Conway 1992, Scoones 1998, 2009, Ellis 2000) which similarly take a holistic systems approach to analysing the determinants of well-being and rural livelihood sustainability, recognizing that there are always multiple outcomes. Once accessed, resources may be called 'assets' that are combined with livelihood activities in particular social-institutional settings to constitute livelihood strategies. Livelihood strategies should be understood as processes that unfold over time, as opposed to livelihood 'activities', such as farming, fishing, wage labour, etc. (cf. Scoones 1998, 2009, Ellis 2000).

A key feature of sustainable livelihoods is resilience, or the ability to cope with or recover from stresses and shocks caused by changes in access (Scoones 1998, Ellis 2000). A common strategy to increase resilience is diversification of livelihood activities, an often on-going social and economic process shaped by factors of pressure and opportunity in dynamic social-ecological systems (Ellis 2000: 14). In order to cope, i.e. temporarily adjust in the face of change, or to adapt, meaning longer-term shifts in livelihood strategies according to changed circumstances, actors' substitution abilities are critical. A low flexibility or ability to substitute one type of asset with another decreases resilience, and hence increases vulnerability and the improbability of achieving sustainable livelihoods (Ellis 2000: 42). This flexibility is again shaped by access, including its relational and structural aspects (Davies and Hossain 1997, Ellis 2000, Ribot and Peluso 2003). Disruptions in access may affect the poorest disproportionally because of their already narrower portfolio of assets (Pearce and Swanson 2008). Social norms and identities may dictate the kind of diversification opportunities or coping mechanisms available to different actors, with important implications for e.g. women's resilience (Davies and Hossain 1997).

Against these observations, it is clear that multiple factors condition livelihood rehabilitation, or achievement of sustainable livelihoods, following conservation-related changes in access to productive resources. This poses challenges for defining the adequate and fair compensation for lost assets that the policies related to conservation-induced displacement and resettlement call for. Even from a purely economic perspective, coping or adapting may entail transition or transaction costs in addition to the replacement of the lost assets (Pearce and Swanson 2008). Therefore, monetary compensation for the measurable market value of lost physical assets may not be sufficient to guarantee successful post-intervention livelihood rehabilitation (Cernea 2003). It may also be difficult or even impossible to monetize or otherwise materially compensate for such social and human capital as cultural values, meanings, or beliefs associated with specific resources, resource uses, and places, which may have conditioned people's resilience in the past but no longer apply in the changed circumstances. Although there have been some attempts to theorize the various factors that shape (development or conservation-related) post-displacement livelihood rehabilitation beyond monetary compensation (cf. Cernea and Mathur 2008), documented empirical testing of these theories is scarce.

3. Material and Methods

3.1. Study context

3.1.1. Framework for forest governance in Tanzania

Tanzania is endowed with approx. 450,500 sq. km of forest and woodland, amounting to nearly half of the total land area of the country (FAO 2010*b*). Most of this is miombo woodlands, followed by scattered coastal forests and mangroves. Biodiversity-rich humid montane forests, such as the Eastern Arc Mountain forests, currently form only a fraction of the total forest area (less than 2%, Wily and Dewees 2001: 2). The exact areas of forest and woodland, and further the areas of different types of forest, are debated due to fragmented and outdated data (FAO 2010*b*). An on-going National Forest Resources Monitoring and Assessment effort is expected to produce more reliable data by 2012 (http://www.mnrt.go.tz/, accessed 21 August 2012).

The framework of central control over forests, and all natural resources, was established in Tanzania during colonial rule. Many of the resource rights of local people were ruptured as the state law subordinated local customary laws. The practices were reinforced in the first decades of independence (Hurst 2003, Kallonga et al. 2003). The basic division of forests into 'reserved' and 'unreserved' forests, still underlying many legal and policy provisions in Tanzania, dates back to the colonial era. Wily and Dewees (2001: 3) point out that reservation does not denote a tenure system; yet until recently, all forest reserves were strictly – even if not necessarily effectively or efficiently – controlled by the state, and the vast majority of the forest reserves continue to be so. This classification does not determine the use of the forest area, either; reservation may take place for production or protection purposes alike. During colonial rule, both interests determined management objectives (Iversen 1991, Woodcock 2002), but as a result of post-independence development trajectories, management of the government reserves is now largely orientated towards conservation. It has been argued that in the first decade of independence, forestry, and foresters as custodians of the vast forest reserves – the then Forest Division, precursor of the current Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism – became marginalized actors in terms of contributions to the national economy and growth, out of sync with the mainstream development objectives (Hurst 2003). Yet forest exploitation for timber and charcoal production soared in the 1970s through government-led initiatives, assisted by overseas development aid (Sunseri 2005). The current dominant management paradigm, focused on exclusionary conservation through enforcement of the existing government reserves and the creation of new ones, has been attributed to the growing influence of international conservation and development actors on national policies since the 1980s (Sunseri 2005, Vihemäki 2009).

Along with the global policy shifts, community-based approaches to forestry and natural resource governance were cautiously introduced into the portfolio of forest conservation instruments through pilot initiatives in 1980s-90s (Wily and Dewees 2001, Woodcock 2002).

In the 1990s, development in Tanzania took the same turn as in many other countries grappling with the legacy of colonialism. Democratic decentralization was introduced to address the observed shortcomings of centralized natural resource control that had rendered vast areas of land under inefficient management and failed to create benefits for the majority of the nation's poor rural population. The rationale behind the forest tenure reform echoed that of the wider movement towards decentralization globally: strengthening local ownership and participation in forest management was expected to increase the effectiveness of management and to create more social benefits, ultimately contributing to poverty reduction (cf. URT 1998*a*, 2005, Kallonga et al. 2003). Forest decentralization followed the tenure reform of land and local governance (Table 1), enabling many of its key objectives.

Table 1. Key laws and policies related to the decentralization of local government, land and forests in mainland Tanzania.

Sector	Law or policy	Year of enactment
Local Governance	Local Government Authority (District and Urban) Act	1982
	Local Government Reform Programme	2000
Land	National Land Policy	1997
	Land Act	1999
	Village Land Act	1999
Forest	National Forest Policy	1998
	Forest Act	2002
	Community-Based Forest Management Guidelines	2007

Source: Modified based on Table 5.1 in Rantala and Lyimo (2011: 111).

One of the aims of the Local Government Reform Programme is political decentralization, the devolution of powers to locally elected councils and committees at district, ward and village levels. Local governments are accountable to the parliament, autonomous of the central government. They have the responsibility for social development and public service provision within their jurisdiction, including facilitation of national policy implementation in various sectors, such as natural resources and forestry (URT 1998*b*).

Village is the lowest formal unit of government. The powers to manage natural resources on village land, a legal land category meaning land within surveyed village boundaries, have been vested in the village council. The 25 members of the village council consist of the chairpersons of sub-villages (Swa. pl. *vitongoji*) and representatives elected by the village assembly, to which the council is accountable in many of its decisions. The village assembly is a periodic meeting that is open to all residents above 18 years of age; a central arena for public participation, deliberation and decision-making in the village. At an intermediate level between the village and district, chairpersons of the village councils and village executive officers, appointed professional officials, form the ward development council. The district council is the central decision-making body at the district level. It consists of elected members from each ward in the district, members appointed by the minister for local government,

selected members from party organizations and among village chairpersons, and local members of parliament (Local Government [District Authorities] Act 1982).

In principle, the relationships between levels are to be administrative, technical, consultative and advisory in nature (URT 1998*b*). Nevertheless, the decentralized land and forest laws contain elements that maintain a degree of top-down control over village natural resource management. For example, many village land and forest management documents require approval by the district council, which also supervises the implementation of village land use and forest management plans. At the same time, mechanisms of downward accountability available to the village assembly are limited to the approval or disapproval of decisions made by the village council (Wily 2003, Sundet 2005).

The land law reform in the late 1990s produced the Land Act (1999) and Village Land Act (1999) which set out the current statutory provisions for land tenure in Tanzania, with important implications for forest access. These laws define the rights to land that citizens may hold, while all land (soil) remains in the custody of the president of the republic on behalf of all people, as a colonial legacy.

Customary rights are the principal way for the Tanzanian rural population to access land, in many cases meaning the prevailing local practices of land access and not always requiring historical precedence (Wily 2003). Although the Village Land Act recognizes customary rights as existing and secure rights even when not registered, village councils may apply for a certificate of village land once the village boundaries are determined and agreed upon with neighbouring entities, and then grant certificates of customary occupancy to individuals and groups in order to enhance the security of the rights. In practice, however, district and central government officials continue to disregard customary rights if there is no certificate of village land or certificates of customary ownership, which is the case for the vast majority of rural Tanzanians (cf. TFCG and MJUMITA 2011). The absence of certificates of village land gives space for different interpretations on where general land ends and village land starts. The Land Act defines ‘general land’ as a residual category that is not reserved or village land, but it may also be considered to include unused or unoccupied village land. This caveat could be used to exclude villagers from considerable areas of common property, if ‘unused’ is taken to mean ‘uncultivated’. Similarly, village councils may consider unused or undeveloped private parcels as communal land (Village Land Act 1999, Sections 57(1) and 23(1), Wily 2003, Sundet 2005). It has become clear that forestry officials continue to interpret unregistered village land as general land, a view repeatedly adopted in e.g. various versions of the National Strategy for Reduced Emissions from Deforestation and Forest Degradation, REDD+ (URT 2009, 2011).

The land laws also state the procedures to be followed in the establishment of forest protected areas, involving transfers of village or general land to the category of reserved land. The procedures for informing, consulting with, obtaining consent from, and paying compensation to local communities are defined in the Village Land Act. The village assembly has the power to approve or reject removal of under 250 ha of land from the village, constituting a limited right to give or withhold consent to the land transfer. Rights holders to the land to be

transferred, including holders of customary rights, whether registered or not (Village Land Regulations 2001), are entitled to a compensation, the terms of which (type, amount and timing) need to be mutually agreed upon before the transfer can take place. The Village Land Regulations (2001, 8-10) state that compensation is to be paid for the land itself together with improvements. In addition to the property of individual occupants, compensation must also be paid for communal land within the village (Regulation 8a).

The establishment of protected forest areas is also governed by forest legislation, in line with the provisions of the land laws and reflecting the emphasis on increased public participation in forest management that the National Forest Policy (URT 1998a) calls for. In addition to defining the consultative processes and an investigation of customary forest rights, the Forest Act (2002) prompts to consider alternative actions if such customary rights are proven to exist. These include modification of the rights or modification of the conservation plan to accommodate the two, conservation of the area through community-based forest management, rejection of the plan in light of local livelihood costs, or declaration of the reserve regardless of existing rights because of the high national or international importance of conserving the area (Section 24). In case the reserve establishment process proceeds, rights holders are entitled to "full and fair compensation" for the reallocation of their rights (Section 22). The Forest Act also defines mechanisms to redress unsatisfactory decisions. Despite elaborate consultative processes, the forest law does not provide affected communities with the right to withhold consent to conservation plans.

Regarding forest decentralization, the National Forest Policy (URT 1998*a*) and Forest Act (2002) build on the legal framework of communal land tenure administered by the village councils. The two approaches to participatory forest management recognized by the national legislation are Community-Based Forest Management (CBFM) and Joint Forest Management (JFM). CBFM concerns forest management by village communities on village land, in theory providing opportunities for some of the most devolved powers for local communities to manage their forests in sub-Saharan Africa (Katila 2008, Ribot et al. 2010). Table 2 presents the status of the efforts to scale up CBFM across the country. JFM, in turn, focuses on joint management agreements on central government forest reserves between the government and adjacent local communities. The implementation of the JFM policy has been marred by difficulties and has practically stalled because the State Treasury has failed to approve the general benefit-sharing principles for the joint management agreements. At the field site of the current study, JFM processes were started in the late 1990s but the initiatives have largely succumbed to dormancy due to the unresolved national policy issues. This study, therefore, is concerned with assessing the performance of CBFM. The focus is also justified because the CBFM policy model in Tanzania conforms very well to the theoretical principles of democratic decentralization, providing an interesting opportunity to investigate how the expectations of forest tenure reform play out in practice.

Table 2. Status of Community-Based Forest Management policy implementation in Tanzania.

Area of forest under CBFM	2.35 million ha
Number of villages engaged in CBFM	1,457
Number of districts engaged in CBFM	51
Forest types under CBFM, % of total area covered	Miombo woodlands, 68% Acacia woodlands, 16% Coastal forests, 15% Montane forests, 1%

Source: URT (2008*a*), Blomley et al. (2010).

Based on a review of relevant policies, two broad policy objectives of CBFM may be identified: 1) sustainable forest management, and 2) improved rural livelihoods (Blomley and Ramadhani 2006). A third goal, security of tenure, is mentioned in the National Forest Policy (URT 1998*a*) and in a revised policy draft produced in 2008 (URT 2008*b*) as the primary means to achieve the two ultimate goals, although the causal mechanism is not specified.

The expectations of livelihood benefits are largely implicit in the policy texts. In the forest policy, it is stated that village land forest reserves are to be managed "for production and/or protection based on sustainable management objectives" (URT 1998*a*, Policy statement 6). One of the components under the Tanzania National Forest Programme, the principal instrument to implement the forest policy, is Forestry-based Industries and Sustainable Livelihoods, which, however, focuses on promoting private sector investment in forest industry development and does not specify livelihood objectives related to community forestry (cf. URT 2001). The National Strategy for Growth and the Reduction of Poverty stands out as the only policy document with the explicit target to "scale up Participatory Forest Management in all Districts, as a mechanism for increasing income of rural communities from natural resources management" (URT 2005: Annex p. 11). The national CBFM guidelines note that villagers may reserve their forest in order to "obtain tangible benefits from sustainable harvesting" (URT 2007: 1). An evaluation of the success of participatory forest management in contributing to rural livelihoods commissioned by the government supports the notion of implicit livelihood benefit expectations (URT 2008*c*).

The CBFM policy focuses on the demarcation and setting aside of village land forest reserves (VFR) or community forest reserves within which the villagers resource rights are considered most secure (cf. URT 2007). This is justified in the policy as a necessary measure to secure the protection of the village forest by the national law, and to counter threats of forest conversion to other land uses (URT 2007: 3). Villagers, through the village council, have the right to make and enforce rules concerning harvesting of timber and forest products, exclusion, and sanctions for violators. They may collect fines and collect and retain forest royalties (Blomley 2006). The management of the VFR, including enforcing the rules, monitoring and sanctioning activities, is usually vested in a village natural resources committee (or 'forest committee') elected in the village assembly. The processes to be followed for the establishment of VFRs are summarized in Table 9 in Section 4.4. Although

the law requires a review of existing customary rights to resources in case a declared village land forest reserve is to be gazetted, it is silent on how customary rights to forest and land should be taken into account in the initial stages of VFR establishment, when the decision is made and the boundaries are drawn.

The National Forest Policy (1998*a*) identified a gap in the institutional framework concerning the management of private forests. The Forest Act (2002) encourages participatory 'planning, management, use and conservation of forest resources through the development of individual and community rights, whether derived from customary law or under this Act' (Section 3[b]). Yet the law makes no reference to customary or local management of forest and trees in privately held or unreserved communal village areas. Villagers' rights to the so-called reserved trees – valuable timber or endangered tree species that have been protected by state law since pre-independence (Woodcock 2002) – are only considered secure when the trees grow within an established village land forest reserve, according to the prevailing practice (cf. Blomley 2006, URT 2007). Nevertheless, the Forest Act states that the reserved trees clause ceases to apply if the trees are not on general land (Section 65[3]), e.g. they are on village land, whether within a VFR or not. This observation again underlines the pivotal importance of defining village land vs. general land for formalizing local access to forest resources.

3.1.2. East Usambara Mountains: a microcosm of global changes in forest governance

The East Usambara Mountains are situated in Tanga region, northeastern Tanzania. They are part of the Eastern Arc Mountain range, a renowned biodiversity 'hotspot' in East Africa extending across eastern Tanzania to southern Kenya. More than a hundred species of endemic flora and fauna are confined to the East Usambara Mountain forests, especially the upland evergreen Afromontane rainforest (Rodgers and Homewood 1982, Myers 1990, Burgess et al. 2007). The mountains are also home to people who have practiced agriculture on the mountain slopes for hundreds of years (Feierman 1974, Conte 2004). Administratively, the East Usambara Mountains landscape of about 1,300 km2 (Hamilton 1989*a*: 29) is currently part of the districts of Muheza, Mkinga and Korogwe. The population of 28 mountain villages in three divisions included in the East Usambara Forest Landscape Restoration Project of the World-Wide Fund for Nature (WWF) and Tanzania Forest Conservation Group (TFCG) was estimated to be 135,000 in 2008 (Malugu et al. 2008). Competing interests in forestland, based on global biodiversity values of the now heavily fragmented forests, on the one hand, and growing local demand for agricultural land, on the other, are in the epicentre of conservation-development tensions in the East Usambaras.

Although the scope and intensity of human disturbance of the East Usambara Mountain forests has varied, it has a long history (Hamilton and Bensted-Smith 1989, Iversen 1991, Conte 2004). The current landscape of the mountains reflects the varying socio-economic, political, and cultural interests of diverse actors that have left their mark in the forest-agriculture mosaic. These interests have been heavily influenced by the changing market and policy conditions that have shaped natural resource management objectives globally since the start of the colonial era.

Accounts of pre-colonial settlement in the East Usambaras are based on archaeological evidence (cf. Hamilton 1989*b*, Conte 2004), reports by German explorers in the late 1800s (cf. Iversen 1991, Conte 2004), as well as detailed ethnographic research carried out in the 1960-90s (Winans 1962, Feierman 1974, Woodcock 2002, Conte 2004). The Shambaa, still the largest ethnic group in the area, share traditions regarding the arrival of the ruling class of Kilindi around 1740. By the 19th century, an extensive Shambaa kingdom encompassed the West and East Usambara Mountains (Feierman 1974, Iversen 1991). Most rights to land were politically vested in the Kilindi rulers who were thought to hold the power to bring rain, essential for the survival of the agriculturalist Shambaa. Forested wilderness areas in the mountains were associated with rainmaking and included many sacred, protected sites. Other forests and cultivated areas were under community tenure, in the custody of Shambaa lineages that could make and enforce rules about access, management, withdrawal and exclusion regarding land and forest resources. A council of elders, consisting of the heads of each lineage in the village, mediated disputes and was accountable to the local Kilindi chief. Rights to use and manage land could be bought and sold privately. Shambaa women had rights to land and trees of their lineage, which had to be relinquished upon marriage. Women could not inherit their husbands, but could regain access to resources within their lineage if divorced or widowed. Polygamy was the norm, and each wife had to be provided with land to cultivate, which was then inherited by the children of that wife. Differing accounts regarding the security of customary Shambaa land rights have been presented, but in some cases planting trees could enhance it. The felling of trees was controlled by leaders, and required a ritual to calm the benevolent and malevolent spirits that resided in the trees. Certain trees were specifically protected by beliefs and taboos (Dobson 1940, Winans 1962, Feierman 1974, Woodcock 2002, Rantala and Lyimo 2011). As such, the customary system may have favoured the survival and spread of certain species over others, and shaped the mountains' ecosystems.

The customary tenure system started to erode after the arrival of the Germans. During colonial rule, land became formally property of the state and was divided it into forest reserves, private estates and public land (Hamilton and Mwasha 1989*a*, Woodcock 2002). Most of the today's 20-odd government forest reserves in the East Usambaras were established pre-independence (Iversen 1991). The colonial administration, including the British who replaced the Germans after the First World War, was concerned about the exclusionary conservation of forests for water services, climate regulation and soil erosion control (Hamilton and Mwasha 1989*b*), although timber export interests may have influenced management strategies in practice (Iversen 1991, Woodcock 2002). The recent history of the East Usambaras makes for a case in point regarding the pivotal role of colonialism for the changing practices of forest management in the tropics (cf. Conte 2004). The rupturing of customary tenure systems and the formal closure of forests from people, in practice converting them to open access as the administration had reduced capacities to enforce regimes, the legitimacy of which was contested, contributed to the development of unsustainable practices. As the authority of traditional leaders was gradually undermined, no one assumed forest management responsibilities on public land. The tendency was compounded during the first decades of independence as the government policies sought to reverse the alienation of the local

population from land in estates and reserves, increased areas of public land and contributed to the expansion of forest conversion (cf. Hamilton and Mwasha 1989*c*, Woodcock 2002, Conte 2004). It is of course impossible to say how the East Usambara landscape would look like today without the colonial interventions. Conte (2004) has drawn attention to the impact of colonialism-induced market integration on local approaches to natural resource utilization at the same time as the colonizers themselves increasingly romanticized and sought to segregate 'pristine' mountain landscapes from human use. In this case, as in many others, colonialism spurred the observed development trajectory, but even without a similar history, it is very rare to encounter areas that would remain outside of the influence of the global market economy today.

From the late 1940s, forest exploitation expanded with the emergence of new profit-oriented actors, such as the Sikh Sawmills that acquired several tea estates in the uplands but focused on logging rather than tea production (Iversen 1991, Conte 2004). Work opportunities in tea and sisal estates as well as the sawmilling industries attracted immigrants from other parts of Tanzania, contributing to the erosion of local cultural values and beliefs associated with forests (Rantala and Lyimo 2011). Many of these migrants settled in nearby villages, clearing forest for the cultivation of cardamom and other spice crops. Cardamom was first introduced to the area by the Germans, and gradually became the mainstay cash crop for East Usambaran small-scale farmers (Iversen 1991, Vihemäki 2009). The prevailing practices of cardamom agroforestry have been associated with a detrimental environmental trajectory in which the natural forest undergrowth is first cleared to make way for cardamom seedlings that require the shade of the trees to flourish. When soil fertility is exhausted, more trees are cleared as the cardamom gives way to sun-grown crops. In the end, the land is abandoned, developing into grassland and thicket that no longer regenerates as forest (cf. Stocking and Perkin 1992, Reyes et al. 2006, Bullock et al. 2011). Cardamom cultivation is thus seen as one of the major drivers of forest degradation and deforestation in the East Usambaras (e.g. Hamilton and Mwasha 1989*c*).

The commercial forestry operations in the East Usambaras intensified as foreign interests came to play again in the 1970s, this time in the form of development aid. The government of Finland supported the operations of the Sikh Saw Mills, by then nationalized, logging timber and processing them in the regional capital of Tanga. By the early 1980s, environmental damage caused by the extractive activities started to attract growing criticism nationally and internationally. Researchers strived to bring the unique biodiversity values of the East Usambaran forests, now under threat, to the fore (e.g. Rodgers and Homewood 1982, cf. Vihemäki 2009). The logging operations gradually ceased from mid-1980s onwards (Hamilton and Mwasha 1989*c*, Mwalubandu et al. 1991). Forest inventories in 1986-87 confirmed the critical state of the East Usambara forests due to the unsustainable forestry practices (Hamilton and Mwasha 1989*c*).

To make up for the damage caused, Finland agreed to support the Tanzanian government in strengthening sustainable forest management in the East Usambaras for the conservation of biodiversity and environmental services, such as the hydrological services that the region and the city of Tanga depended on. Parallel to the global environmental processes that culminated

in the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, the East Usambara Catchment Forest Project (EUCFP) was launched in 1991, and the management of the landscape began to be geared towards conservation. Efforts were focused on the enforcement of the existing forest reserves and the creation of new ones, including the establishment of the Amani Nature Reserve in 1997. The local counterpart of the project was the Forestry and Beekeeping Division (FBD) of the Ministry of the Natural Resources and Tourism (MNRT). The International Union for Conservation of Nature (IUCN) together with the Ministry of Agriculture and Livestock Development, with support by the European Commission, was simultaneously implementing the East Usambara Conservation and Development Project, an example of the ICDPs of the time. While attention to local participation in the global conservation and development discourse was growing, the two projects were joined as the East Usambara Conservation Area Management Programme (EUCAMP), implemented in 1999-2002. Environmental education, farm forestry and community forestry pilots featured on the agenda, although scientific biodiversity inventories and enforcement of the protection of the government forest reserves remained the core objectives of the project. The project and government officials were keen to delegate forest management tasks to local people, but the approach remained very much top-down. The devolution of forest rights and powers to local communities was limited and cautious, and their role was seen as more instrumental in implementing pre-defined forest conservation objectives (Stocking and Perkin 1992, EUCFP 1995, Tye 1995, Ellman 1996, EUCAMP 2002, Veltheim and Kijazi 2002, Vihemäki 2009).

Today, implementation of the national policy objectives regarding the management of state forest reserves is continued in the East Usambaras by FBD through its Tanga offices and the Amani Nature Reserve headquarters. The implementation of the National Forest Program is supported through the World Bank-funded Tanzania Forest Conservation and Management Project and the Eastern Arc Mountains Conservation Endowment Fund (www.easternarc.or.tz, accessed 8 August, 2012). The status of the JFM initiatives started during EUCAMP in the villages adjacent to two forest reserves in the East Usambara Mountains (Veltheim and Kijazi 2002) is unclear, and it is apparent that the villagers have not been actively involved in the implementation of the management plans in recent years (Vihemäki 2009, Rantala et al. 2011). The management of forests outside of the reserves on general land falls under the mandate of the district administration. District natural resource and forest officers are to facilitate the establishment and implementation of participatory forest management in their jurisdiction, principally by strengthening community ownership over forests on village land through CBFM. This effort, however, largely rests on NGOs, TFCG and WWF, that have promoted CBFM in various East Usambaran villages as part of their Forest Landscape Restoration Project since 2004. The district officials are mainly preoccupied with timber harvesting control (Rantala et al. 2011).

3.1.3 Background to Studies I and II: the Derema Corridor

In the 1990s, attention was drawn to the fragmentation of the East Usambara Mountain forests, increasingly confined within the borders of the reserves. The decreased landscape connectivity formed a threat for the survival of the endemic biodiversity and ecological

functioning of the mountain ecosystems. Several conservation corridors were proposed to be established to connect the reserves. Among these, the Derema corridor was considered the most urgent for its role in connecting the Amani Nature Reserve in the southern part of the landscape with forest blocks to the north (Newmark 1993, Tye 1995, Figure 3). Despite the stated ecological importance, it was estimated that the Derema area was almost completely cultivated by small-holder farmers by the 1990s (Johansson and Sandy 1996), which had previously led to the abandonment of the conservation plans (Iversen 1991). The corridor establishment process was started as part of the EUCAMP project in 1999. The main events are summarized in Table 3.

Table 3. Main events in the establishment of the Derema Corridor (modified based on Table 1 in Study II).

1974	Derema area first considered as a forest reserve
early 1990s	East Usambara Catchment Forest Project starts. Derema again proposed as a forest reserve, later as a wildlife corridor
1999	Establishment of Derema corridor included in the work plan of EUCFP/EUCAMP 1999-2002
July 2000	Social Impact Assessment (SIA) carried out in the five villages to be affected by the corridor
March-June 2001	Boundary survey and demarcation
July 2001	Mid-term review of EUCAMP recommends an alternative, community-based conservation approach
August 2001	Reservation approach upheld in a stakeholders' workshop in Muheza; confirmed by the EUCAMP Steering Committee
March 2002	Compensation payments for boundary crops
May-June 2002	Valuation of crops inside the corridor
December 2002	EUCAMP closure; compensation pending
2004	World Bank (WB) support sought
2005	Part of remaining compensation paid to farmers
2006	Derema Resettlement Action Plan (RAP) prepared for WB
February-May 2008	Final compensation paid to farmers with WB funding
January 2010	RAP implementation ends; farmers yet to receive substitute farmland.

Sources: Iversen 1991, Tye 1993, EUCAMP 1998 and 2000, Jambiya and Sosovele 2000, Sjöholm et al. 2001, Pohjonen 2002, URT 2006, authors' data.

A Social Impact Assessment (SIA, Jambiya and Sosovele 2000) conducted in the five villages to be affected – IBC Msasa, Kwezitu, Kambai, Kwemdimu and Kisiwani – in 2000 provided information on the socio-economic context of the conservation intervention. Although the exact figures are debated (see Study II), more than a thousand farmers were to be affected by loss of land to the corridor. Ninety-nine percent of the population included in the SIA study depended on cardamom cultivation, typically intercropped with food crops, as their most important source of income. The land access of these farmers was based on customary tenure by local Shambaa kinship groups, as well as allocation by the villages' leadership and the

government post-independence. Virtually no one had any official documentation concerning their land occupancy (Jambiya and Sosovele 2000, Study I). A third of the people to be affected had landholdings smaller than the current East Usambara uplands average (between 2.6 and 3.6 ha, depending on the village; cf. Reyes et al. 2010, Bullock et al. 2011), while a small minority was well endowed by local standards, accessing over 8 ha of land. The majority had one or two plots, including farms outside the corridor area (Jambiya and Sosovele 2000: 13). Only farmland was included in the corridor plan; the boundaries were drawn to exclude settlements to avoid costly relocation (URT 2006).

Despite initial resistance, probably due to negative experiences related to the establishment of the Amani Nature Reserve (Jambiya and Sosovele 2000, Vihemäki 2009), the farmers agreed to the conservation plan. The boundary of the 956 hectare corridor was demarcated in mid-2001, and crops in that area were slashed (EUCAMP 2002, Pohjonen 2002). The following year, the farmers were paid compensation at a flat rate based on their own estimates of yield per plant. Based on this rate, compensation owed to the farmers turned out to be many times higher than the project had anticipated (URT 2006).

As the boundary demarcation was underway, the mid-term review of EUCAMP in 2001 criticized the programme for sustaining an exclusionary approach to forest conservation and recommended that area be conserved through community-based forest management instead (Sjöholm et al. 2001, Pohjonen 2002). However, a subsequent "Derema villagers' workshop on the selection of the management approach for the Corridor" concluded that the establishment of a government forest reserve in Derema should proceed (Pohjonen 2002).

Furthermore, in 2001, EUCAMP was advised by the Ministry of Lands to adhere to the new Village Land Act and associated Land Regulations of 1999 (URT 2006). This means that the Derema area was eventually considered village land, with implications for the conservation and compensation process (cf. Section 3.1.1). Yet the compensation method, which had been planned according to the old land law, was never revised. Compensation was only paid for the standing crops, not for the lost land rights, nor for any lost access to communal land in the villages.

Farmers with land inside the corridor were registered in mid-2002. The method of identifying those eligible for compensation involved calling farmers onto their fields on certain days as teams of valuers surveyed the area. Only the counted crops and the farmers' names were recorded (URT 2006: 18-19).

The estimates of the total sum of compensation needed changed several times as EUCAMP strived to complete the process (cf. Pohjonen 2002). Following the boundary compensation, a new method was applied in which plants recorded on each farm were classified into payment categories according to their maturity and expected yield. Seedlings entitled to little compensation, while higher payments were made for mature plants (Pohjonen 2002, URT 2006). Despite the new approach, EUCAMP closed in 2002 without sufficient funds to finalize the payments.

In 2004, the process continued upon involvement of new actors. MNRT approached the World Bank to request financial aid in order to complete the compensation and corridor establishment. The government paid about half of the compensation to each farmer in 2005. Final compensation payments, with an interest added, were paid after the Tanzanian government had secured funding from the World Bank in March-May 2008. As part of the agreement, a Resettlement Action Plan (URT 2006) was prepared according to the World Bank Operational Policy (OP) 4.12 on resettlement. The plan included "income restoration measures" such as dairy cattle, beekeeping, butterfly farming, and fish ponds to target the poorest affected farmers. In addition to the financial compensation, 3-acre farm plots on former sisal estates in the lowlands surrounding the East Usambara Mountains were planned for interested farmers (URT 2006). The Resettlement Action Plan expired in early 2010. The substitute land allocation issue remained unresolved at the time this summary was drafted in August 2012.

The current study was focused on the subvillages of Makanya, in IBC Msasa, and Antakae in Kwezitu, which were perceived by local key informants to be the most severely affected by displacement from the corridor (see also Reyes et al. 2010). Field research coincided with the final stages of the (formal) Derema corridor establishment process, starting some months before the final payments in 2008, during the payments, a few months after them, and again over a year after the final compensation in 2009.

Makanya is located in the middle of the current corridor; the boundaries were drawn to avoid inclusion of the settlement, forming a notch in the shape of the reserve. Most inhabitants had been cultivating in the area that was conserved. Antakae is located adjacent to the corridor on its northwestern side (Figure 3). At the time of the corridor establishment, the livelihood strategies of people in these two villages were highly specialized in cardamom farming; only a handful of youth from Makanya, and the immigrant population of Antakae, were employed by the tea estates adjacent to the two villages. Makanya has been argued to be one of the oldest villages in the East Usambaras, possibly dating back to the pre-colonial era, although the exact location of the village has somewhat varied (Vihemäki 2009: 154). Cardamom cultivation was started in the 1960s, initiating in the areas opened up by logging (Vihemäki 2009: 156).

In addition to the farming of cash crops – cardamom as well as other spices, mainly cinnamon and cloves – the Derema area had provided the people with a source of food, firewood, medicine, timber and building materials. Food crops, such as banana and yams, were typically intercropped in the agroforestry systems. Women collected wild foods in the forest, and to an extent, bushmeat was hunted. Traditionally, parts of the forest had functioned as sites of rites and spells. In addition to the corridor forest, people also had farms elsewhere, including cardamom farms in other locations in the mountains as well as open fields of maize, beans and cassava closer to the homesteads (Jambiya and Sosovele 2000, Study I).

3.1.4 Background to Studies III and IV: Community-Based Forest Management

During the EUCFP and EUCAMP projects, Community-Based Forest Management was piloted in a few villages around the East Usambara Mountains, largely following the steps of planning, by-law making and forest surveying later included in the national guidelines (URT 2007, cf. Ellman 1996, Veltheim and Kijazi 2002, Mustalahti 2006). Smaller NGO-led initiatives had also been started in the 1990s, such as the one around Kambai village in the lowlands (Woodcock 2002, Vihemäki 2009), and IUCN had facilitated village forest management in Makanya village, in the area of the future Derema corridor (Vihemäki 2009). Although differing economic and political interests within the villages regarding the forest resources posed some challenges, initial experiences were deemed largely positive. However, the establishment processes did not reach the final district approval status, except for one VFR which was even gazetted (cf. Veltheim and Kijazi 2002, Mustalahti 2006).

Tanzania Forest Conservation Group, a Tanzanian NGO with a mission to conserve the Eastern Arc Mountain forests (www.tfcg.org, accessed 9 August, 2012), has worked in the East Usambaras since early 1990s, starting with the Kambai forest conservation project (Woodcock 2002). Since 2004, collaboration with WWF Tanzania Program Office and WWF Finland has provided the organization the means to expand their work throughout the landscape, focusing on the facilitation of Community-Based Forest Management on village land. Activities also include creating alternative income generating activities for villagers such as beekeeping, butterfly farming and fishponds, as well as the establishment of communal tree nurseries. By 2009, the project included 16 villages (WWF 2009). It has targeted villages that occupy critical locations for forest connectivity in the landscape, with the aim of increasing tree cover in areas that could function as ecological corridors between the largest forest blocks (Doggart et al. 2007).

In 2007, the World Agroforestry Centre (ICRAF) and Center for International Forestry Research (CIFOR) launched the 'Landscape Mosaics' research project which combined action research and conventional multidisciplinary research to facilitate better integration of biodiversity conservation and local livelihoods in landscape management (http://ongoing-research.cgiar.org/factsheets/cifor-icraf-biodiversity-platform-research-on-biodiversity-conservation-on-a-landscape-level, accessed 9 August, 2012). The Tanzania site of this comparative project was chosen to be the East Usambaras, in collaboration with the existing TFCG/WWF project. The field research for the current study regarding Community-Based Forest Management was carried out in conjunction with the Landscape Mosaics project, focusing on three villages, while I worked as the ICRAF site leader of the project in 2007-2009. These villages, Shambangeda and Misalai in the uplands of the mountains, and Kwatango in the lowlands, were also identified as "corridor villages" in the TFCG/WWF project (Doggart et al. 2007). CBFM establishment and implementation was at different stages in the villages by the time the research was conducted (Table 4), while the village land use planning processes coincided with it in 2008. Collaboration with the projects provided me with a front seat view of the governance processes within the villages, although it may also have created a certain bias in the research process, discussed in section 5.1. The project also involved an MA student to work in three additional villages of the TFCG/WWF project

(Table 4), looking into partially overlapping issues of CBFM (cf. Bullock 2010) and eventually contributing to Study III. I also expanded field work to these villages through complementary interviews in 2009. In Zirai and Mgambo, CBFM had first been piloted in the late 1990s (cf. Veltheim & Kijazi 2002), but the scheme had gone through some years of dormancy before being resuscitated by TFCG.

Table 4. Context of research on Community-Based Forest Management (modified based on Table 2 in Study III).

Village Forest Reserve	Reserve area (ha)	Year of establishment	Forest type	Focus of research
Kwatango	52	2004	Lowland forest	Primary
Misalai	60	2007	Submontane rainforest	
Shambangeda	18	2004	Submontane rainforest	
Kwezitu	36	2004	Submontane rainforest	Secondary
Mgambo	156	1998 (2004)	Submontane rainforest	
Zirai	36	1998 (2004)	Submontane rainforest	

With the exception of Kwatango, the study villages are located in the densely populated East Usambaran uplands (Figure 3). Population densities correlate with rainfall and are higher in the uplands of the East Usambaras than in the lowlands, as in other parts of Tanzania (cf. Shao 1986). Villages fill areas between the tea plantations and government forest reserves (Figure 3), and the village land itself consists of a mosaic of agroforestry systems (cardamom intercropped with other spice cash crops and food crops, such as yams and banana), fields of sun grown crops such as maize, beans and cassava, and increasingly sugar cane which has recently been overtaking cardamom as the most profitable cash crop (Bullock et al. 2011). Some small-holder tea is also grown. Reportedly, most of the available farmland in the upland villages has been allocated to the inhabitants. Distinct from the study villages in the Derema case, a large proportion of people in these villages earn at least part of their annual income by working on the commercial tea estates. Patches of forest remain within the VFRs and to an extent, on privately held land. Private parcels, however, are always called ‘shamba’, farm; the Swahili word for forest, ‘msitu’ is only used of the reserved areas (Rantala and Lyimo 2011). This may reflect an ideological separation of forest from human landscape as a colonial legacy (cf. Conte 2004: 149).

Kwatango was a remote village when this research was conducted; before being upgraded, the road to the village remained in poor condition for most of the year, severely limiting people’s access to public services and economic integration with the rest of the region. The population

density was low, and communal land was available for allocation to villagers and newcomers, including private investors. Most inhabitants earned their living from farming maize, bananas and groundnuts.

Although a considerable proportion of the current East Usambaran villagers are relative newcomers, the Shambaa remain the largest ethnic group in all the study villages. In the household surveys carried out as part of the Landscape Mosaics project and this study, half of the respondents were of Shambaa ethnicity. Linkages between Shambaa lineages in the West and East Usambara Mountains persist, and there is mobility between villages within the region. The other half of the population is ethnically very mixed, the Bondei and the Zigua being the second-largest ethnic groups. Despite expectations of higher ethnic diversity in the upland villages, where most immigration has been directed, the demographics in Kwatango were very similar to the other study villages.

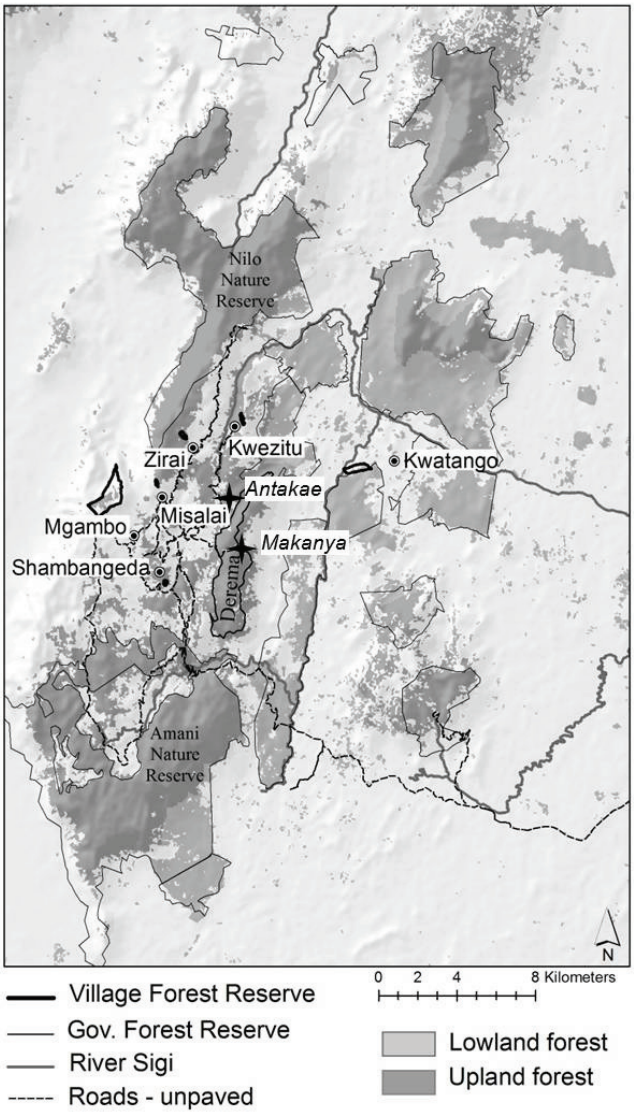

Figure 3. Study villages in the East Usambara Mountains, Tanga region, Tanzania. Map courtesy of Dr Jaclyn Hall, 2011.

3.2. Methods

In the absence of comparable data from before the conservation interventions, a mix of quantitative and qualitative ethnographic research methods was adopted to piece together a detailed picture of the socio-economic outcomes of the establishment of the Derema corridor, on the one hand, and of CBFM, on the other, as well as the social processes that have shaped

the observed outcomes. The two approaches were combined in a sequential and somewhat hierarchical manner, as the research strategy was largely qualitative (cf. Bryman 2008: 22). In taking the pragmatic view that research methods may be applied as technical tools, drawing from the advantages of each method, the current study rejects the position that quantitative and qualitative methods are epistemologically embedded and hence cannot be mixed (cf. Johnson and Onwuegbuzie 2004, Bryman 2008). Because the aim was to ground the research in the context in which it was conducted, the qualitative strategy was considered justified to create space for the emergence of concepts and patterns in their interactions that were relevant in that context. Furthermore, it was considered that relying solely on quantitative methods, such as a structured survey involving brief, superficial interaction with a large number of respondents, would not be adequate for capturing such sensitive issues as people's personal experiences and coping strategies following loss of assets, or intra-village political struggles. Limited quantification, mainly through descriptive statistics, was used to distil salient from anecdotal patterns of data (Bryman 2008: 599). The approach was iterative in alternating data collection and analysis (cf. Bryman 2008: 541-545).

The first periods of field research in January 2008 and in March-May 2008 were focused on obtaining contextual and community level information to frame the study, and starting to identify patterns in the relationships between the attributes of various actors, governance processes and livelihood outcomes. The methods included unstructured and semi-structured group interviews with villagers in different roles regarding forest governance: village council and forest committee members, as well as 'ordinary' villagers, women and men. Apart from the interviews of the committees in which various members participated, groups were usually gender-segregated in order to provide women with a comfortable setting to talk. Participatory rural appraisal exercises conducted as part of the Landscape Mosaics project and the village land use planning processes, such as participatory mapping, seasonal calendars, historical timelines and functional analysis of land use types, provided additional information about tenure and resource access, livelihood activities and strategies, and social dynamics within the villages. Through key informant interviews with individuals that were particularly knowledgeable, or affected by the conservation interventions in particular ways, more detailed information was obtained. Although some of them became regular sources of information and updates in the course of the research, care was taken to avoid starting to see the world through their eyes only. To the extent possible, information that surfaced through the key informants was triangulated through other interviews or sources.

In addition to the village level data collection, interviews with regional and local government and NGO representatives helped to broaden understanding of the conservation processes and the various actors involved, their interests and actions. A review of grey literature, such as project documents and unpublished research reports, was essential in obtaining an idea of the context in which the different conservation approaches operated at the study site, considering the specific history of forest governance in the East Usambaras and the multiple actors involved over the years. Village forest management plans, by-laws, minutes of village forest committee meetings and records of village forest income and expenditure were used as data. Access to the files of the Derema Resettlement Action Plan project office in Muheza town

provided an opportunity to crosscheck the compensation sums mentioned by interviewees against the official records of paid compensation in Study I, in order to determine the accuracy of respondent recall.

For an investigation of the intra-village social and political processes (esp. Study IV), it was important to observe the practices of deliberation, information sharing and village decision making. Direct observation in village council meetings, village assemblies and farmers' meetings related to the Derema conservation and compensation process provided an idea of participation by different local actors, the types of issues communally discussed and positions held by various actors as well as their 'voice' in decision making. My role varied from that of "observer as participant", when facilitating meetings or group exercises as Landscape Mosaics project staff, to that of "complete observer" in meetings where the researcher had no formal role, and did not intervene with the social interaction (cf. Gold 1957).

In September-October 2008, a survey with 339 respondents across the five villages was carried out to collect data at household and individual level (Table 5). A minimum of seventy households were randomly drawn from a sampling frame including all households in each village, using the village office registers. In order to obtain information on how impacts of the conservation interventions were distributed between economic strata in the villages, a panel of key informants classified the sampled households in each village into groups of 'high', 'middle' and 'low' wealth status according to indicators that they had previously defined based on values shared by most villagers. The participants, men and women in equal numbers, were selected to represent the different parts of the village. They first defined indicators of wealth widely shared in the village context, which typically included the total area of land accessed for farming, the number of livestock (dairy cows) owned, and housing conditions (building materials, number of rooms). They also had to agree on the order of importance of the different indicators. The participants determined non-overlapping descriptions for the indicators in each wealth class. Drawing cards with the randomly sampled household names and discussing the situation of each household in relation to the pre-defined indicators, they assigned the households to wealth groups. The participants had to reach a consensus on the classification.

Next, the panel determined different ways in which households had benefited or incurred costs due to the conservation interventions, and indicated the households to which the described experiences applied. The households were then divided into "mostly benefited", "neutral" and "mostly incurred costs". The first forty households, in the order that they had entered the random sample, were assigned into the resulting nine-cell sampling matrix (three values for wealth status times three values for conservation effects), so that the original proportions of each wealth class in the random sample were maintained, but a representation of the three types of conservation effects was achieved, if possible. From the reserve of remaining 30 households, substitute households could be drawn if a primary household could not be interviewed despite attempts on 3-4 consecutive days.

Both spouses of a household were interviewed individually to enable comparison of responses, resulting in a slightly higher percentage of female respondents in the sample due to

female-headed single-parent households. In polygamous families, the first wife or the current co-habiting spouse of the husband was interviewed. It was stressed to the respondents that they should only answer a question on their own behalf and not for the overall situation of the household, and they were specifically told when the question concerned other members of the household.

The survey questionnaire was designed to elicit data regarding access to resources (mainly land and forest), access to compensation in the case of the Derema corridor, livelihood strategies, and perceived impacts. The survey protocol was pre-tested in a third village, allowing adjustments and improvements before a team of enumerators (two local research assistants and four recent University of Dar es Salaam graduates) administered the survey in the study villages. The survey was administered in Swahili, spoken by virtually everybody in the study villages, under my supervision.

Table 5. Survey sample in 2008.

	Total n HH sampled	Male respondents		Female respondents	
		n	Age: median /min-max	n	Age: median /min-max
Antakae	40	30	40/ 29-81	38	31/ 20-78
Makanya	41	31	34/ 21-64	35	26/ 20-80
Kwatango	41	32	45/ 22-84	34	42/ 18-70
Misalai	41	26	38/ 27-65	35	35/ 19-70
Shambangeda	42	32	47/ 30-81	42	39/ 21-80

Following partial analysis of the qualitative and survey data, further data collection in April 2009 and September-October 2009 focused on interpreting and validating patterns of data with the villagers, principally through focus group discussions (mixed and gender-segregated groups) and key informant interviews. In complementing previous data, sampling was focused on certain individuals or groups by following specific emerging patterns of data (cf. theoretical sampling, Glaser and Strauss 2004). In the CBFM study villages, semi-structured group interviews were conducted with respondents that had indicated personal livelihood losses or gain because of CBFM in the 2008 survey. The views of the village leaders and forest committee members were also further probed. In the Derema villages, in-depth semi-structured interviews were conducted with 31 respondents to the 2008 survey to observe further changes and impacts over a year after the final compensation, in September 2009. Relatively greater attention was given to people who had received no or very little compensation for lost access; they constituted half of the interviewees. Women were over-represented in this group. The other half was split between interviewees who had received large sums of compensation and those in the 'middle compensation' category, based on quartiles of total compensation received according to the 2008 data. Site visits to people's

homes and farms, some of them in new locations following displacement from the Derema corridor, helped understanding how the conservation approaches really played out in people's lives, and how their responses shaped resource use in the surrounding landscape.

The qualitative interviews in Swahili were carried out with the help of a local research assistant who functioned as an interpreter. He was from a local village (a neighbouring village to one of the study villages), an entrepreneurial farmer with secondary education, and also a trained tour guide of the Amani Nature Reserve who had worked with several ecologists and social scientists before. This probably raised his status in the villages, but the humble attitude with which he approached everybody made him well received and accepted. I was initially concerned with how a male research assistant would affect my interactions with female interviewees, which would be pivotal to my research objectives, and strived, but failed, to find a suitable female research assistant. Local women did not speak English sufficiently well to translate accurately, and I did not want to involve conservation project workers, or students who were not familiar with the local context. I soon realized that I had feared in vain, as the women appeared relaxed and un-intimidated by him in the interview situations. The advantages of my assistant, who was instrumental in finding the right people in the villages and introducing me, outweighed any possible bias. As our working relationship and my language skills developed, I became convinced that the translation was very accurate and that many times there was an unspoken understanding of what I 'was after'. Furthermore, most of the interviews were recorded, and transcribing and translating them together provided a further means to control and improve the quality of the work.

4. Results

4.1. Social impacts of compensated displacement from the Derema corridor (Study I)

The main finding of this study was that the conservation intervention strengthened local social differentiation by failing to account for the social relations and previous access to resources that conditioned access to compensation, livelihood strategies, and finally the post-displacement outcomes to different social groups. Women and the poorest farmers experienced the strongest negative impacts, whereas those who were previously better-off emerged as relative winners among the affected people.

The most acutely felt changes as a consequence of the corridor establishment were related to decreased access to farmland. Seventy-nine percent of the survey respondents in Makanya and 47% in Antakae had lost land to the Derema corridor. As anticipated (Jambiya and Sosovele 2000), the distribution of land areas lost to the corridor was skewed towards smaller areas within the range of 0.1-5.0 ha; the median was one hectare. Although the area of land was not used as basis for the compensation calculation, there was a significant positive correlation (Spearman's rho 0.426) between the area of farmland lost and the total compensation received over the years (one to three times per respondent, including the boundary compensation, 2005, and the final compensation). The distribution of total amounts of compensation received was also highly skewed towards the smaller end of the huge range from less than 30 to over 10,000 US dollars (Table 7). The changes in land access and compensation received per wealth class have been summarized in Table 6, combining the data from both villages. The median compensation in the highest wealth class was seven times higher than that in the lowest wealth class.

Table 6. Lost access to land and access to compensation at the aggregate level of wealth groups (modified based on Table 2 in Study I).

	Lowest (n=36)	Middle (n=82)	Highest (n=16)
Percentage of those who lost land to the corridor	58	57	100
Median area of farmland lost (ha)	0.4	1.2	1.0
Median total compensation received (TZS)	227,500 (USD 190)	360,000 (USD 300)	1,612,500 (USD 1344)

Note: Exchange rate used: USD 1 = TZS 1200 (2008).

The importance of farmland for local livelihoods, and people's cultural identity as farmers (cf. Feierman 1974), is perhaps reflected in that decreased access to forest products as a consequence of the Derema corridor establishment was not a salient feature in the qualitative data, although reported by 46% of the survey respondents. Many interviewees discounted the impacts on access to forest products as these were said to be available on farm (cf. Study III).

Indeed, the majority of those who did report reduced access responded by harvesting forest products on their remaining farms (48%) or by planting trees on farm (25%).

Men and women were similarly affected in terms of restricted access to farmland, but men had far greater access to the monetary compensation (Table 7). Women's land access consisted of land personally 'owned', according to the local concept of private ownership, as well as land accessed through joint ownership with their spouse, and land borrowed from other family members. According to the Shambaa custom, widows may act as custodians of land which formally belongs to the children of the deceased man. These relational mechanisms of land access became disputed in the compensation process, and women's land rights were bypassed by male household heads or other male relatives who collected the compensation. They were thus dependent on the intra-household allocation of compensation and other remaining assets in the post-displacement situation. Comparison of data between spouses revealed that women's access to and knowledge of the monetary compensation received by the household was restricted: in Antakae, nearly 60% of the interviewed women were not aware that their spouses had received compensation (15% in Makanya), and over 90% did not know the amounts or uses of the compensation (in Makanya, 55% and 25%). The impacts of decreased access to land and compensation for women were compounded in cases where the family disintegrated following the receipt of the compensation payments, and indirect access to post-displacement assets was further reduced.

Table 7. Gendered impacts on access to land and compensation (modified based on Table 3 in Study I).

	Land lost to the corridor, median ha	Received compensation for lost access	Median total compensation	Range
Women	1.0 (n=40)	30%[a]	TZS 300,000 (USD 250) (n=11)	TZS 50,000 – 1,600,000 (USD 42 – 1,333)
Men	1.2 (n=45)	95%	TZS 642,500 (USD 535) (n=42)	TZS 31,000 – 12,900,000 (USD 26 – 10,750)

[a] The question concerned only land personally owned, but some respondents may have considered other types of access (see above) in answering the question.
Exchange rate used: USD 1 = TZS 1200 (2008).

Yet, there was variation regarding nature and intensity of the gendered impacts. Some women who had registered for the compensation themselves collected it and used it as they had planned, either independently or together with the husband. In other, especially the lowest wealth group households, overall access to both land and compensation was restricted, and the women bore their share of the consequences.

The long time lag in the payments, previous greater land endowments and access to other resources, including social and human capital, were identified as the main factors that were likely to have influenced the way old and new assets were combined for livelihood strategies,

and subsequent livelihood outcomes to the different social groups. The perceived discrepancy between the economic importance of the corridor farm and the lump sum of monetary compensation, received after a long delay, was accentuated for the poorest farmers with small initial land endowments, whose compensation did not allow re-investment in land. In the lowest wealth group, the compensation was used almost entirely on consumption, including food, transport, clothes and health care. Building or repair of residences ranked high as a use of the cash in all groups, indicating that improving their housing conditions was among the most urgent needs of the local population. In the lowest wealth group, and for many in the middle group, post-displacement livelihood strategy combined farming food crops on remaining land, typically more open land at lower elevations, and wage labour on neighbours' farms. This suggests that these farmers were mainly resorting to temporary coping strategies rather than engaging in longer-term adaptive diversification.

The lag not only impeded resource mobilization when needed, but probably also affected farmer decision making on the use of the cash compensation. EUCAMP had initially allowed harvesting of the corridor farms while producing, as long as they were not maintained, and cardamom from the corridor continued to contribute to the income of some farmers until as late as the end of 2008. The farmers were also aware of the plans included in the Resettlement Action Plan (URT 2006) to acquire and allocate alternative land to them in the lowlands. It is possible that these two factors influenced investments by those who did receive enough money to buy new farmland. It was not until 2009 when the cash compensation was finished, harvesting in the corridor ceased, and the land issue remained unsolved, that their resilience was put to test.

The relatively better-off farmers, who had received considerable sums of compensation, invested in new farmland both in the uplands as well as in the lowlands, further diversifying their livelihood strategies. Income from the remaining, producing cardamom farms was used to develop the new land. In addition, they invested in diverse businesses, such as shops, rental houses and functioning as middle-men in the local agricultural value chain. These relative winners of the conservation intervention could be characterized as entrepreneurs who used the additional cash input to realize existing plans. They were an exception among the affected people in expressing content with the conservation and compensation process and the associated personal gain.

4.2. Governance processes shaping post-displacement livelihood impacts (Study II)

The way the Derema conservation and compensation process played out for different affected social groups was shaped by departures from initial plans, agreements and the relevant policies, compounded by structural challenges related to the project setting for implementing the intervention. Inadequate access to information and other resources set limits to the agency of those affected in the aggregate, and contributed to unequal conditions of claiming and defending access within the affected population.

Despite widespread concerns about the effects of displacement evident during the Social Impact Assessment in 2000, villagers' apparent support for the establishment of the exclusionary government reserve was subsequently reported (Jambiya and Sosovele 2000, Pohjonen 2002). Yet, only a handful of villagers had direct access to the negotiations with the representatives of EUCAMP and the government. Many of the interviewees in the villages, especially women, felt that they had not participated in making the decision about the corridor (Table 8). Those who represented other villagers in the negotiations, and later in following up on the compensation, were usually older, more affluent men in leadership positions in the villages. Considering that the intervention finally only benefited the wealthy farmers who were able to make investments with the compensation (Study I), it is likely that this group was motivated to promote certain approaches over others, such as displacement with monetary compensation instead of village forest reserves, and cash compensation as personal cheques instead of other forms of compensation. Perhaps due to a cultural bias, the preferences of the male leaders turned out to have a bigger weight in the consultations with the conservation officials. Although women's voices were heard and documented at the start of the intervention (cf. Jambiya and Sosovele 2000), their requests for a compensation approach that would take the gendered land access into account were not considered at any point of the process. Nevertheless, expectations of prompt and considerable compensation based on what was received for the crops on the corridor boundary – TZS 28,000 (approx. USD 35 in 2001) per plant – may have initially worked in favour of general support for the cash compensation method in the villages.

Table 8. Participation in the decision about the Derema corridor and the selection of village representatives, and information flows in the two study villages according to the survey conducted in 2008.

Gender	Village	Participated in making the decision about the corridor (%)		Found out about the corridor through (%)				Participated in selecting the members of the follow-up committee (%)	
		Yes	No	Village assembly	Family, neighbours	Village leaders	Other[a]	Yes	No
Women (n=75)	Antakae (n=39)	15	85	46	44	8	2	10	90
	Makanya (n=36)	6	94	17	64	3	16	11	89
Men (n=63)	Antakae (n=31)	35	65	61	23	0	16	36	64
	Makanya (n=32)	62	38	56	3	9	32	75	25

[a] Researchers, forestry staff, other external contacts.

As the conservation and compensation process lagged on, frustration and dissatisfaction became widespread in the villages. By 2005, the affected farmers from the five villages had organized themselves in a committee that visited the district and regional forestry offices several times in an attempt to obtain information on the status of compensation, and to exert

pressure on the authorities. In doing so, the farmers utilized their broader social networks of people that they thought to be in positions to influence the process. Researchers working in the area and interested in the conservation process, such as myself, were perceived as potential messengers to whom the villagers vented their frustration. Discursive means of resistance included threats of slashing the regenerating forest vegetation and taking back the land by force unless the money was paid, and repeated portrayals of the affected people as the impoverished victims of the conservation intervention. New information was employed in this struggle as it became available, such as when the farmers became aware of their legal right to compensation for the land, in addition to the crops, in 2009.

Access to information turned out to be a key variable shaping the process for nearly all the actors involved. The agency of the farmers' committee was undermined by repeated failures to acquire relevant information, as well as by lack of knowledge of the responsible authorities or the institutional accountability measures available. For example, whereas virtually all interviewees deemed the final compensation received in 2008 insufficient and less than they had expected based on their own calculations, the World Bank project received very few reclamations during a three-week grievance period in November 2008 (A. Kijazi, Pers. comm., September 2009). It is possible that the objections to the compensation sums were part of the discursive resistance, but interviewees in the villages claimed not to have been aware of the opportunity or the procedures to file formal complaints.

Although the farmers' follow up committee was considered a legitimate representative of the majority of the survey respondents who were aware of it – most female interviewees were not, cf. Table 8 – the trust eroded among some people due to the inability of the committee to influence and speed up the process. This was probably fuelled by the general frustration of people with the process, growing distrust of the authorities' willingness or capabilities to finalize the payments, and disappointment over the amount of compensation when it was finally received. Misunderstandings contributed to the confusion, when the flow of information to most of the affected relied on sporadic encounters between the conservation implementers and village leaders. It gave some actors space to manipulate the situation to their advantage, and whether deliberate or not, varying interpretations of what had been agreed, or not, were presented. Especially women, whose access to village assemblies is restricted particularly in the case of remote subvillages such as Makanya (cf. Table 8), often relied on second-hand information and rumours concerning the conservation and compensation process.

The actors behind the conservation intervention – EUCAMP officials, government forest officers and the World Bank project staff in the last phase – may have similarly operated amidst uncertainty and with restricted knowledge. Indications of unpreparedness and unclear locus of responsibility over the intervention that was started by a foreign-funded development project, with subsequent discontinuities in the involvement of the implementing actors, may be observed throughout the process. They are evident especially in the actions of EUCAMP (cf. Pohjonen 2002, Sjöholm et al. 2001), but it is unclear why the departures from the applicable legal and policy provisions were maintained even after comprehensive studies by consultants in preparation for the World Bank funding, or why the bureaucratic complications

in the land allocation in the lowlands were not better prepared for, even if anticipated (cf. URT 2006: 24-25).

4.3. Community-Based Forest Management: re-allocation of forest rights and livelihood outcomes (Study III)

A comparison of the Community-Based Forest Management policy expectations (cf. Section 3.1.1.) to experiences of implementation in the context of the East Usambara villages demonstrated that the more secure forest rights have largely not translated into livelihood benefits for the participating villagers. The CBFM implementation follows the model of exclusionary forest management within village forest reserves, heavily orientated towards conservation and forest regeneration.

Figure 4 summarizes the practices of re-allocation of bundles of rights related to forest resources, including land, in the East Usambaran villages engaging in CBFM. De jure rights to withdraw and manage resources and exclude others have been devolved from the central and local (district) governments to the village councils through the establishment of the village forest reserves. But the enforcement of VFR management plans and by-laws has also meant that many customary rights to forest resources previously held by individuals and families have ceased to exist. Although VFR establishment is primarily intended to take place on communal land, in all study villages it has involved the appropriation of privately held farmland to some extent. Certain forms of resource use, such as collection of firewood, wild vegetables and medicine, remain officially allowed in the VFR regulations, but stricter rules are applied in practice. Levels of knowledge about the village forest rules among survey respondents with no direct role in village forest management in three villages (n=153) were low; nearly a third could not say whether certain activities were allowed or not in the VFR. A comparison of the survey data revealed that 86% of the forest committee members (n=21) interpreted officially allowed activities to be forbidden, compared to 63% of the other respondents.

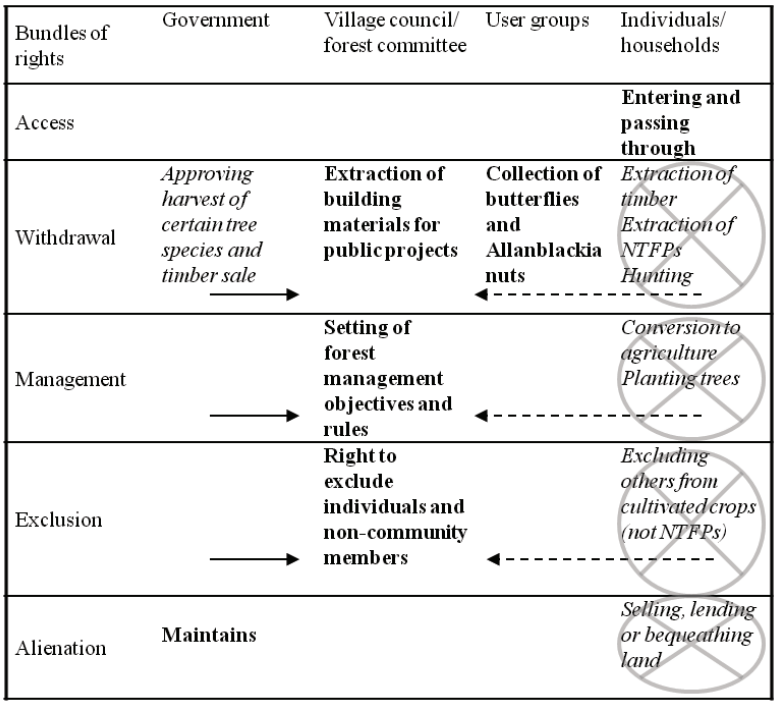

Figure 4. Reallocation of forest rights as a result of CBFM establishment in East Usambara Mountains villages. The format of the graph has been modified based on Barry and Meinzen-Dick (2008: 18) and populated with findings from the current research. (Key: **bold= de jure rights**; *oblique= de facto rights/practices.* Solid, right-facing arrows: rights devolution; dashed, left-facing arrows: rights revocation.)

Yet less than 20% of the survey respondents in the study villages reported restricted access to forest resources as a consequence of CBFM. This is explained by the diversity of sources of forest products which are collected principally on own and neighbours' farms; timber, building materials and firewood are reportedly still available in the agroforestry systems. All of those who had experienced restricted access responded by shifting harvesting from the village forest area to farms and tea company forests. The importance of access to resources in these alternative areas is accentuated for those who have little or no own farmland, such as the part of the population in the upland villages that relies on tea picking as the main livelihood activity. However, experienced restrictions or other negative impacts of CBFM were not associated with e.g. the wealth status of the survey respondents.

In general, a minority of villagers associated any problems with the establishment and implementation of the village forest reserves (Figure 5). The most salient concerns were related to the incidents of land appropriation, as well as damage to crops by forest wildlife, seen to have increased following the VFR establishment. Among those affected that were interviewed, loss of land seems to have focused on farmers with slightly larger land endowments than the village average, which may have mitigated the experienced opportunity costs. Nonetheless, the farmers indicated strong dissatisfaction and livelihood losses due to

the annexation, although lacking data prior to the intervention precluded quantification of any costs. Crop raiding by wildlife, such as monkeys and rats, was suggested to have increased the labour cost of farming next to the forest, as especially women and children had to keep watch on farms.

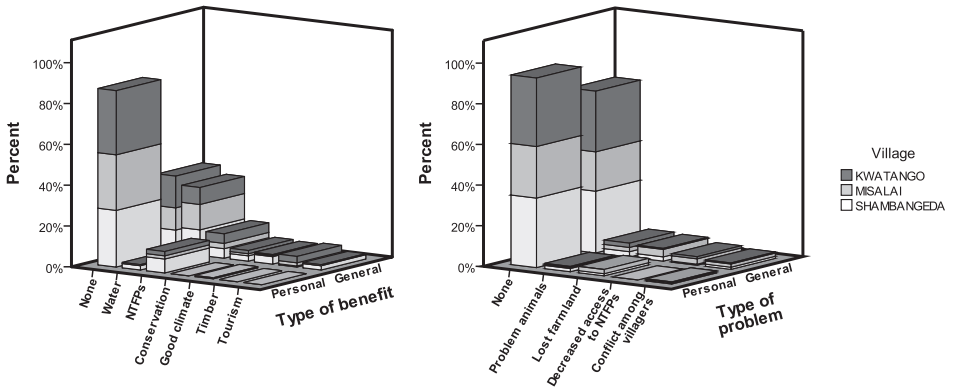

Figure 5. General/personal benefits and problems associated with village forest reserves, based on coded responses to open-ended questions by survey respondents (n=198) in three study villages (modified based on Figures 2 and 3 in Study III).

The benefits from CBFM are mainly associated with indirect conservation values (Figure 5). Forests are seen as the source of rain and water, essential for agriculture and subsistence. Some interviewees suggested that the environmental conditions in the village area had already improved because of the village forest reserve. Conservation of wildlife is expected to attract tourism, a potential future income source. Although direct returns from forest products are currently negligible, as the village forest rules prevent any extractive use, some interviewees had the idea of future harvesting of, for instance, timber. An exception in the current situation is butterfly farming (part of Non-Timber Forest Products, NTFPs, in Figure 5), which constitutes a significant income source for those involved (among the study villages, in Shambangeda and Kwezitu) and a strong incentive to promote forest conservation (cf. Morgan-Brown et al. 2010).

Yearly direct revenue from CBFM to the six study villages, recorded in the books of the forest committees, ranged from TZS 0 to 180,000 (USD 120; 2011) in 2008-2011; the median annual income was zero. The sporadic income consisted mostly of VFR entry fees paid by researchers and other visitors, as well as a few fines paid by villagers that had been caught breaking the by-laws. Hence most of the time, there is no communal forest income to offset the transaction costs that the involved villagers, committee members and forest guards, incur

from CBFM implementing activities, such as participating in meetings and patrolling the forest. Decreased motivation due to lack of compensation and equipment, even rain boots and basic tools, were reported by all forest committees. In Mgambo village, income from a pilot REDD+ research project had contributed to a conflict between the forest committee and village leaders, and in 2009, it was debated whether the money had been disbursed and where it had gone.

4.4. Legitimacy, collective action and sustainability of Community-Based Forest Management (Study IV)

This study investigated the social and political processes of CBFM establishment and implementation in order to explain the observed strict village forest rules, forfeited benefits and asymmetric distribution of costs (cf. Study III), comparing national policies to practices in the East Usambara villages. The input legitimacy of CBFM regimes was assessed focusing on the parameters of inclusion, representation, deliberation and accountability, seen as central to the theoretical linkages between forest rights devolution and expectations of sustainable community forest management.

Table 9 summarizes the legal and policy provisions guiding the establishment and implementation of CBFM and the corresponding practices in the study villages. Whereas the law (Forest Act 2002) defines the process in quite general terms, detailed recommendations for each step have been included in the national CBFM guidelines (URT 2007). The East Usambara practices largely follow the approach of the guidelines. Initiation and implementation rely heavily on the support by TFCG. District staff has been engaged through sponsorship by the TFCG/WWF project in the facilitation of village land use planning. The district officials lament inadequate resources to allow them to regularly carry out their tasks, although they have been allocated support through the National Forest Program specifically for CBFM.

Table 9. Policy and practice in CBFM establishment and implementation.

Steps in CBFM establishment and implementation	Relevant legal and policy provisions (Forest Act 2002, national CBFM Guidelines, URT 2007)	East Usambara practices
1. Initiation	Guidelines: "takes place at the district level, with the selection of villages and briefing of district staff, plus the formation of a team of staff with different skills to do the work", followed by meetings with the village council and village assembly (p. 11) Village land must be defined (p. 6); boundary surveying & agreement with surrounding entities sufficient (p. 6, 11)	TFCG-WWF project has approached villages and proposed CBFM to the village council which has introduced the idea to the village assembly. Completed village land-use planning taken as a pre-requisite for CBFM establishment.

2. Election of a Village Natural Resource Management Committee	Law: Village Natural Resource Committee is elected by the village assembly; gender-balanced; the principal body concerned with the management of the Village Land Forest Reserve; accountable to the village assembly on a regular basis (Section 33 (1), (2)) Guidelines lists additional instructions regarding the election of the committee (p.15)	"Forest committees" (Swa. *kamati ya msitu*) have been selected in the village assemblies. Gender ratio most frequently 7 female + 8 male members.
3. Village forest boundary surveying	Guidelines: to be done carefully and as inclusively as possible '… to avoid displacing people or causing conflicts later' (p. 16)	Crucial step in the process; has caused conflicts in the study villages as the boundaries have been drawn to include some private farmland.
4. Development of a village forest management plan	Law: village council shall consult users and user groups as well as local authorities to ensure broad support (Section 14 (1)) Guidelines: participatory forest resource assessment as basis for the plan (p. 16-21); management objectives defined; proposes questions to be considered to define 'if harvesting is an option' (p. 20)	TFCG facilitated planning with a group of volunteers from the village, often later formalized as members of the forest committee. Management plans in all villages highly congruent and focused on conservation and regeneration.
5. Preparation of village forest rules (by-laws)	Law: village forest reserve is to be managed according to by-laws that *may* be made by the village council, or according to local customary rules and practices (Section 34 (4); emphasis added) Guidelines: the village *must* prepare bylaws, approved by the village assembly (p. 8; emphasis added); district technical consultation (p. 23)	By-laws prepared by 'village leaders' (village council and forest committee); other villagers informed through the village assembly. At the district approval stage, different villages' by-laws have been homogenized in an annex attached to the management plans.
6. Declaration of the village forest reserve	Law: village assembly approves the management plan and by-laws; registered in the district (Section 34) Guidelines: District council approval required for the management plan and by-laws following village assembly approval (p. 23-26)	Guidelines followed; final district approval has been a bottleneck and slowed down the establishment of the village forest reserves.
7. Implementation	Law: as per management plan and by-laws (Section 34) Guidelines: committee shall be effective in awareness-raising, forest patrolling, monitoring and record-keeping, dealing with 'forest encroachment', rehabilitation (p. 27-29); district to supervise (p. 11)	Guidelines followed; support and monitoring by TFCG. Management consolidated in the forest committee; limited participation by other villagers.
8. Revision and gazetting	Guidelines: after three years, the management plan and by-laws should be reviewed and revised; the village council may also request the village forest reserve to be gazette, but this is optional (p. 11)	(No reviews or revisions had yet taken place during data collection)

In practice, the establishment and implementation of CBFM rests on a small sub-set of villagers. Although it was generally agreed that the decision on CBFM initiation had been made in the village assembly, ownership over the decisions adopted in the assemblies may be reduced by regular absenteeism for a number of reasons. This is especially true for women, who are often unable to allocate time for public participation from domestic chores and farming (cf. Study II). One third of the female respondents in 2008 had not attended any assembly in the past 12 months, in comparison to men, 85% of whom had attended at least one. Participation fatigue, due to a perceived disconnect between various village meetings and

discussions, and subsequent implementation – or rather, non-implementation – of decisions and plans, was also reported as a reason for not attending the assemblies. On average, around 13% of female survey respondents and about a third of the male respondents considered that they had participated in making the decision about the village forest reserve, in the election of the forest committee, or in the making of the village forest rules (Table 10).

Table 10. Participation in village forestry decision making by female (F, n=110) and male (M, n=87) survey respondents in three villages.

Participated in making the decision about the VFR (%)		Participated in the election of the forest committee (%)		Participated in making forest rules (%)		Participated in the election of the current village council (%)	
F	M	F	M	F	M	F	M
13	39	16	32	10	30	39	57

When survey respondents were asked to grade the performance of the village council and forest committee of their village, most people rated the management of public affairs between average and good. Yet 84% of the interviewed women and 51% of the men did not know who the forest committee members were. A disconnect between personal interests and the proposals and decisions of the village government and the forest committee was reported especially by the interviewees who had been affected negatively by land appropriation for the VFR.

The legitimacy deficits are perhaps most obvious in relation to the deliberative quality of the CBFM processes. The village assembly, gathering villagers typically from 3-4 subvillages, some several kilometres from the village centre, does not appear to work very well as the main arena for public deliberation. The communication in the assemblies witnessed functioned primarily one-way from the village leaders to the public. Only confident individuals – reportedly most of the interviewed men but less than half of the women – were able to voice their concerns. Yet the principle of decision making is majority rule, and assembly decisions are considered legitimate even if the participants are mainly silent listeners. This was considered a problem especially by women who preferred sub-village meetings and more indirect ways of contributing their ideas. Interestingly, the involved women considered that participation in the forest committee had given them more direct opportunities to influence decision making, which in turn had given them confidence to speak in the village assemblies.

Accountability is compromised due to unawareness among villagers of their procedural rights, especially regarding redress mechanisms. Most of those who were dissatisfied with the VFR boundary decisions and land appropriation did not see any means to contest the decisions. The case of one farmer who sought redress outside the village demonstrated that going against those in power in the community meant taking the risk of repercussions and losing one's social status.

What makes one a leader, then, or politically active? Contrary to predictions based on previous literature (Section 2.3), holding a position in the village governing structures (village council or committee membership) was not significantly associated with such pre-defined attributes as gender, age, education, wealth status, or subvillage (location of residence) in either qualitative or quantitative data. It was observed, though, that village chairpersons as well as forest committee chairpersons and secretaries were male, while women constituted half of the council or committee membership, as stipulated by the law. Moreover, it was suggested – although this was not measured in the survey – that the representatives still most frequently belonged to the ranks of the ruling party CCM (Chama cha Mapinduzi or 'Party of the Revolution') despite the introduction of the multi-party system in the early 1990s. According to the interviewees, being confident, talkative and 'already active' in communal affairs were the most determining characteristics for someone to be elected for representative positions. As such, someone with confidence – and importantly, resources – to pursue political inclinations could hold positions over and over again, especially if participation further empowered them, as suggested by the forest committee members.

5. Discussion

In this section, the implications of the studies for the further development of forest conservation approaches are discussed on a general level. More detailed discussion on the case-specific findings of Studies I-IV may be found in the original articles. First, the research approach and process is evaluated critically.

5.1. Evaluating the research approach

The research questions of the current study were informed by contemporary academic and policy debates, such as those related to the negative social impacts of protected areas and the comparative advantages of various institutional designs for building forest-based climate change mitigation on. At the same time, they were also motivated by questions of values (the quest to enhance equity of resource access in the developing tropics) and more pragmatic concerns (e.g. the opportunity to study the Derema conservation process and its peculiarities). In a similar vein, the research approach was not only informed by what was considered appropriate in light of my understanding of the phenomena to be studied, but by what was practically possible. Absence of reliable data from before the interventions precluded a quasi-experimental before-after design, although previous information was used to frame the study. For instance, a considerable effort was made to recover the original data of the 2000 Derema Social Impact Assessment (Jambiya and Sosovele 2000), but to no avail. The current approach was thus focused on pursuing the key patterns of interactions between locally relevant variables and the associated outcomes following conservation establishment. In the process, the theoretical sampling was not only driven by purely empirical findings from the field, but also by my growing understanding of the contemporary theoretical puzzles and debates, the ideas of which became intertwined with those arising from the data. An earlier exposure to some of these ideas could have helped me sharpen the research focus and define my 'niche' in relation to other researchers interested in similar topics, in order to address the concurrent academic and policy debates in a more targeted way. Moreover, the study would have benefited from the strengthening of my methodological skills through graduate studies at an early stage of the research process, as opposed to the middle and late stages, as dictated by the juggling of work and study.

The step-wise approach, alternating the use of qualitative methods with limited quantification, proved fruitful for "combating anecdotalism" (Bryman 2008: 599), uncovering unexpected patterns of data, and clarifying apparent paradoxes. In the absence of comparable data prior to the interventions, the study relied heavily on perception-based data in assessing changes. The risks of perception-based methods relate to the tendencies of respondents to answer questions according to their recall abilities and understanding of concepts, which may vary widely even if specific attention is paid to the way questions are formulated and concepts explained to respondents. They may also answer strategically depending on their understanding of the purpose of the research or the benefits that may be derived from it (Lund et al. 2009, Margoluis et al. 2009).

Triangulation of the interview data proved necessary for two principle reasons that are likely to have filtered the information that people contributed. First, in the Derema case, as mentioned, the atmosphere in the villages in the beginning of the research was tense because of the pending compensation, and visitors such as researchers were seen as potential messengers of the anguish of the affected villagers (cf. Study II). Following the final compensation payments, most people, minus those who received the largest sums, were disappointed with what they had received. This was another reason for attempting to maintain discursive channels to the authorities and donors. In the last phase of fieldwork, the pending allocation of alternative land to the affected farmers was the most burning issue which had to be shared first before anything else could be discussed.

Second, whereas in the Derema villages I could somehow distance myself from the conservation implementers and portray myself as an impartial researcher, especially as the rapport with the villagers developed, in the CBFM villages the situation was more complicated due to the two hats that I was wearing. Participating in the activities of the Landscape Mosaics project, frequently together with TFCG and district staff, at times involving a larger group of people and the use of an ICRAF vehicle, is almost certain to have influenced the data collected to some degree. Pro-conservation statements which echo the discourse of conservation staff as well as that of the village leaders (cf. Study IV) were especially salient in the survey data, collected by enumerators that had only a brief time to interact with the interviewees. Although care needs to be taken not to discount any endogenous reasons that people may have to support forest conservation, it is possible that the association of the research team with conservation establishment made them cite more pro-conservation opinions and actions than would have otherwise been the case.

A comparison of the compensation sums cited by survey respondents and those paid to the same people according to the records kept at the Muheza district office provided some indication that respondent recall in the Derema villages was fairly accurate and the responses aimed to be truthful. The median difference between the total compensation reported by respondents and compensation paid according to district records was TZS 153,610 (USD 128, n=41[4]). The greatest differences were mainly for recipients of relatively large compensation payments over several years. The median difference between sums reported as the final payment in 2008 (the same year as the research was conducted, i.e. recent for the respondents to remember) and the payment records was negligible; TZS 42,909 (USD 36).

The most obvious internal validity problem encountered was with the wealth classification exercise in the Derema villages. Since the exercise took place sometime after compensation had been received, the key informants were asked whether the compensation benefits had

[4] The cross-checking could not be done for the whole sample, as identifying the interviewed farmers among the 1000+ names in the district records posed challenges. People had sometimes used a partially different name in signing up for the compensation from what they reported in the interviews. Some names were repeated in the records, organized by farm and not by farmer, because compensation was collected for various farms. However, in many cases the names slightly differed, either because of a spelling or a recording mistake, or because there were two different people with almost the same name. This made it difficult to aggregate data on compensation received at the level of individual farmers.

affected the placement of some households in the highest class, which was subsequently used for identifying the socially stratified impacts. They insisted that they had used the agreed criteria and the current situation of any given household as the basis for the classification. Yet the current status could be a combination of assets possessed prior to the compensation and acquired after it. Interviews with the classified households also suggested that other implicit views, in addition to the formal criteria, might have affected the outcomes of the exercise. For example, alcoholism appeared to have lowered the wealth category of a household in spite of, for example, area of land accessed. However, tracing the patterns of livelihood activities and outcomes for the various groups through 2008 and 2009 supported the main patterns of the wealth class specific results.

Finally, it should be noted that while I was very aware of being perceived as a potential messenger of the Derema villagers' cause and consciously strived to maintain some degree of 'scientific neutrality', it was challenging to remain unmoved by the stories and experiences encountered. This was not always possible, especially in the case of people who had got 'the short end of the stick' in the process.

5.2. Governance and social outcomes in forest conservation: critical factors

5.2.1. Exclusionary protected areas and compensated displacement

Despite the controversy attached to exclusionary conservation and its human impacts, protected areas are likely to remain one of the main approaches to sustain the world's tropical forests, their biodiversity and the derived environmental services. Globally agreed targets in the Programme of Work on Protected Areas of the Convention on Biological Diversity aim at the creation of a global network of comprehensive, representative and effectively managed national and regional protected area system (Coad et al. 2009; http://www.cbd.int/sp/targets/). A recent report confirms that globally, protected areas are growing in number and coverage (Bertzky et al. 2012). Although other approaches are being developed, the conservation of certain fragile ecosystems may necessitate varying degrees of access restrictions, continuing the exclusionary tradition. Still, consensus in the academic and policy debates has long come to a head about the need to strive to minimize the negative social impacts of exclusionary conservation, especially for the already vulnerable populations. The questions of how, to whom and by whom the costs of conservation should be compensated are now at the centre of the 'people and parks' debate.

Compensation for the taking of resource rights has been likened to direct payments for conservation (Wilkie et al. 2010), promoted as an affordable and cost-effective conservation instrument with growing evidence from the developed world (Ferraro 2002, Ferraro and Simpson 2002). Nevertheless, Ferraro and Simpson (2002: 1718) note: "potential obstacles to implementing a direct payment approach in developing nations include uncertain or inequitable land tenure, limited experience with and enforcement of legal contracts, and limited local opportunities for nonagricultural investment or employment". These and other related obstacles are not insignificant, and will be discussed in the following, reflecting on the lessons learned from the case of the Derema corridor. First, however, the conceptual

difference between compensation for displacement and/or resettlement, and compensation for the medium or long-term delivery of environmental services must be reiterated. The Derema corridor compensation intervention represented the kind of one-off compensation for the permanent taking of resource rights that the national legislation in many countries, such as the Tanzanian land and forest laws, or the guidelines of international organizations, such as the Operational Policy 4.12 of the World Bank or the OECD Guidelines for Aid Agencies on Involuntary Displacement and Resettlement in Development Projects (http://www.oecd.org/environment/environmentanddevelopment/1887708.pdf, accessed 27 August 2012) determine. Payments for environmental services schemes (or 'compensation and rewards' for environmental services, Swallow et al. 2009) usually entail a series of payments regularly spaced out in time, conditional upon the verified delivery of the contracted services by the sellers, who remain the resource rights holders (e.g. Wunder 2006). Importantly, participation in PES schemes is (ostensibly) voluntary (Wunder 2006, Swallow et al. 2009), whereas displacement for conservation or development frequently is not. Even if it was framed as voluntary, in practice such physical or discursive conditions may be created that the affected do not have the real choice to withhold consent or to not relocate (Baird and Shoemaker 2007, Dear and McCool 2010). While some of the reservations discussed in the following apply to both types of compensation, the literature points to important implications of these differences for the social outcomes of the two approaches.

In Europe and North America, property and resource rights are usually well defined, resting on statutory laws with wide bases of legitimacy. In contrast, in post-colonial states in the tropics, including sub-Saharan Africa, legal pluralism and overlapping resource claims are rife. Complex land and forest access patterns exist within communities, kinship groups and households, complicating the task of unequivocally identifying rights holders entitled to compensation if those rights are ruptured. Whether for land acquisition or for a rewards for environmental services scheme, land registration based on Western concepts of ownership may not capture dynamic local realities of land access, and entail the risk of further marginalizing those that do not have the 'voice' to defend their interests. The Derema study is no rarity in documenting a land registration process in Tanzania or in Africa that ended up affecting women's resource access negatively (cf. Gray and Kevane 1999, Odgaard 2002, Yngstrom 2002, Whitehead and Tsikata 2003). Interventions that rely on expectations of unaided intra-household transfers for the equitable distribution of compensation run considerable risks of far-reaching social consequences, based on evidence from this study and other studies on household resource allocation and contribution (Bruce 1989, Katz 1995).

Yet it would be inaccurate to portray women or other disadvantaged groups as mere passive victims in struggles for access. In the Derema process, despite the disparity in opportunities compared to men, the women did try to influence the process through the means available. Their concerns became documented in the studies and consultations carried out, although never effectively incorporated into the planning and implementation of the intervention. The case is illustrative of how dynamic bundles of powers mediate the opportunities for different actors to defend their interests, and the same time, those opportunities are also shaped by the structures for information sharing, consultation and negotiation availed. This is another

important observation for implementing direct payments for conservation based on models and experiences from the developed world. Discrepancies in access to information, transparency of governance, and levels of education remain considerable between residents of the global North and South. Subsequently, landholders in the former – women and men – are in a better position to claim and exercise their rights, determine adequate levels of compensation, and seek redress when conservation decisions are unsatisfactory. They are also more likely to receive unbiased and professional assistance from the authorities in doing so. The Derema farmers encountered resistance to their efforts to influence the process, but strategically incorporated new knowledge into their arguments and actions, illustrative of how actors often actively employ different interpretations of concepts and ideas in their attempt to influence and enact processes (cf. Sikor and Lund 2009). It is plausible to assume that an intervention with a longer time frame, such as a PES scheme, offers different actors extended opportunities to 'catch up' on others in terms of powers to influence the negotiations over resource control, compared to one-off deals of compensated displacement, especially if the goals of mutual learning and empowerment are explicitly part of the approach. The fact that the Derema corridor establishment was intended to be implemented as a punctual top-down operation of resource rights reallocation from the farmers to the state with the associated one-time compensation, but the process was unexpectedly extended, probably undermined any willingness by the authorities to re-open it for negotiations or to take the farmers' political mobilization seriously.

It is easy to point out the flaws in the planning and implementation of the Derema corridor intervention, and attribute many of the negative social impacts to its shortcomings, such as the time lag in the compensation payments. Would the negative impacts have been avoided if the intervention had followed the relevant policies more closely? First, it should be noted that the current case is by far not the first documented incidence of displacement, for conservation or for development, to have been marred by poor planning and implementation (cf. Cernea and Guggenheim 1993, Cernea and Mathur 2008). Rather, there appear to be systemic challenges that hamper the application of compensation policies time and again. An evaluation of the World Bank policy on resettlement in the mid-1980s revealed that the policy was not applied consistently, and many of the legitimacy and social performance deficits of development-induced displacement that had contributed to the policy development in the first place were still abound. The review concluded that the capacities of the implementing agencies in the recipient countries were inadequate, and the bank's supervision was insufficient. Furthermore, viable economic and social options for rehabilitating the livelihoods of the displaced were inadequately planned and financed (Cernea 1993). These findings resonate strikingly with the outcomes of another World Bank funded intervention, the completion of the establishment of the Derema corridor, twenty years later.

Black's (2008) observations on the challenges of legitimacy and accountability in polycentric regimes may be relevant for explaining the persistent problems in applying displacement and resettlement policies. Compensation and resettlement interventions are frequently implemented in project or development aid settings that may be considered polycentric in that they involve multiple actors with complex webs of interdependencies, lacking a central locus

of authority. Whose rules or norms are to be followed, when one set of actors defines the goals and modalities of an intervention, formal ownership over the process is assigned to another, and a third set of actors is to provide the funding? Who oversees the enforcement of mutually agreed rules; who is accountable to whom? These are of course questions pertinent to a broader discussion on the legitimacy and effectiveness of development aid, but relevant for any further plans of compensated displacement for conservation, which are likely to continue to involve multiple transnational actors. Recent global policy discussions on REDD+ demonstrate that governments of tropical developing countries consider that they do not have the resources, or the political will, to implement forest conservation unaided by financial flows from developed nations (e.g. Isenberg and Potvin 2010).

Second, the principle of monetary compensation for the taking of resource rights warrants further attention. The approach has come under growing scrutiny by scholars following countless 'unsuccess stories' of compensated displacement since the 1970s (Cernea 2003, Kanbur 2003, Cernea and Mathur 2008). Failures to achieve pre-displacement levels of well-being among the affected by monetary compensation have been attributed to

1) underestimation or under-valuation of assets for which compensation is due, and consequent partial or non-replacement of lost assets;
2) difficulty in monetizing non-physical losses and failure to account for non-market income and costs;
3) under-compensation resulting from the late disbursement of compensation to those who are left assetless for an unacceptable time period;
4) elite capture of compensation money before it reaches those rightfully entitled;
5) asset appreciation occurring after the determination of compensation, diminishing the purchasing/asset restitution power of compensation recipients; and
6) misuse of compensation money by recipients unaccustomed to handling cash, who are as a result quickly left both assetless and cashless (Cernea 2003: 41).

The Tanzanian law or the applicable guidelines of the financial institutions do not dictate the compensation for lost access to be monetary; rather, they give considerable room for the parties to agree on the suitable form of compensation (hence drawing attention to questions of unequal agency and quality of representation among the affected). The Derema farmers reportedly preferred cash, although it is not clear which other options were discussed, when and with whom (Study II). It is quick to point out that many of the listed observations above applied to the Derema process. But leaving point (6) aside for a moment, what if the intervention had involved full, fair and timely cash compensation for the affected?

Not all cash is necessarily bad. Direct cash transfer programs in Latin America have had encouraging results in contributing to the economies of poor households, and evidence of the positive impacts of similar programs in Africa is starting to emerge (Davis et al. 2012). In Malawi, a national cash transfer scheme involving monthly payments has been shown to generate economic development impacts, reducing negative coping strategies among the poorest beneficiaries (Covarrubias et al. 2012). The obvious difference between these programs and one-off cash compensation for rights reallocation is that they constitute a

narrow but steady stream of benefits to the recipient households, resembling the approach of punctuated compensation or rewards for environmental services. The regularity of the income allows recipients to plan use and investments better, levelling the playing field even for those initially disadvantaged to handle cash.

A recent study by de Mel et al. (2012) suggested that also one-off cash grants may have lasting impacts. Nevertheless, their payments targeted solely micro-entrepreneurs – as the category of people who turned the Derema compensation to their advantage could be described – and positive impacts on profits and enterprise survival were only found among male participants. Despite equal access to financial capital, societal roles may dictate the kind of activities and investments available to men and women, as well as the time available for dedication to business activities.

As suggested by Cernea's point 6 (above), the cash compensation method leaves the responsibility over the use of the money to the recipients, not all of whom have the capacities and resources, including social and human capital, to utilize it in ways that would enhance the sustainability of their livelihoods. It is the poorest that tend to have a very high marginal utility from immediate consumption, and high discount rates (Baird et al. 2009). Furthermore, if economists have failed to take into account the appreciation of resources and depreciation of compensation, or to assign asset values accurately in determining compensation (Cernea 2003, above), local people may not be any more capable of considering the multiple relevant variables in order to determine their true long-term costs of accepting a one-off deal.

Finally, it is not only individual questions of access and agency that affect the outcomes of displacement and compensation. The broader context of the conservation intervention (cf. Figure 2) largely determines the post-displacement economic opportunities for the affected. For the Derema farmers, non-farm opportunities were limited to casual labour on the tea estates, the labour demand of which was considered already saturated by migrant workers. In the areas surrounding the mountain forests, alternative land acquisition is similarly beleaguered by contested and overlapping land claims, with so far no explicit political backing for the resettlement of the Derema farmers (Study I). These broader linkages within and beyond the social-ecological system of the landscape are frequently ignored in narrow sector-specific planning of conservation interventions.

The lessons from the Derema case, echoing previous literature on the social impacts of development-induced displacement, back suggestions that in addition to direct compensation, there is a need for other, timely and potentially long-term supportive measures for the rehabilitation of the livelihoods of the affected (Cernea 2003, Kanbur 2003), especially in the case of the poorest and most disadvantaged among the affected. *Ex ante* assessments should not only provide information on the distribution of likely social impacts of interventions, but also analyse the appropriate and feasible support measures for each identified stakeholder group in the current political economy context, with some projection of the foreseeable future included. The analysis of rights holders entitled to compensation and other support measures should be informed by an inclusive process and an understanding of the cultural factors influencing agency and access to resources by the different social groups to be affected.

Clearly, there is also a need to institutionalize systems that ensure that the findings of pre-intervention assessments are effectively operationalized in conservation planning and implementation, instead of serving as an intervention legitimizing rubber stamp.

Understanding the multiple socio-cultural and political economy ramifications of compensated displacement, the efficiency of direct payments for conservation may be seen in a different light. In estimating the costs of lost access due to conservation, economists have frequently only included the current monetary value of the resources (e.g. Kremen et al. 2000, Ferraro 2002) – as did the valuers in the Derema case, and as did those who determined the compensation in various failed development-related resettlement experiences (Cernea 2003). If exclusionary conservation interventions are to truly mitigate negative human impacts and marginalization of the poorest, and avoid strengthening existing inequalities, we need to add to the asset restitution costs the costs of comprehensive and inclusive planning processes, compensation for transaction costs, and long-term support to and monitoring of livelihood rehabilitation activities. The incorporation of these costs and adequate support measures will multiply the budgets needed for compensated displacement, and will probably make the cost-effectiveness of the interventions appear differently on balance sheets.

5.2.2. Community-Based Forest Management in the context of democratic decentralization

If exclusionary, state-led approaches to tropical forest management have somewhat fallen out of favour in the contemporary conservation and development discourse, discursive and material support for community-based approaches remains strong. From 2002 to 2008, the area of forest under community management in the developing countries out of the 30 most forested countries in the world grew from 22% to 27% (Sunderlin et al. 2008, Larson and Dahal 2012). Numerous studies striving to identify the impacts of the advancing forest tenure reform have found a multitude of policies, goals, implementation strategies and outcomes under the label of 'community management' (Larson and Dahal 2012). In their seminal review of the state of the world's forest tenure, White and Martin (2002) identified three main trends regarding the movement towards greater community tenure: increasing recognition of community forest ownership; allocation of management responsibility of public forest lands to communities; and securing greater community forest access through reforming public forest concessions.

Among its various forms, it has been argued that only community forestry based on democratic decentralization has chances of succeeding in delivering the expected equity and effectiveness outcomes (Ribot et al. 2010). It is not surprising, then, that a bulk of studies has focused on documenting the Tanzanian Community-Based Forest Management experience, in which jurisdictional communities manage forests on community-owned land through ostensibly democratic processes. Results regarding the ecological effectiveness of Tanzanian CBFM have been largely positive (e.g. Persha and Blomley 2009, Blomley et al. 2010, Mbwambo et al. 2012). Ribot et al. (2010) attribute these results to the specific circumstances under which the Tanzanian CBFM performance has frequently been studied: in the context of areas and landscapes that have a history of high-intensity involvement and investment by

external actors through conservation and development projects, such as the Eastern Arc Mountains. This observation is also valid regarding studies on the livelihood benefits from CBFM, mostly concurring with the findings of the current study: benefits to communities and households are so far marginal, and both benefits and costs have been unevenly distributed within the communities (e.g. Meshack et al. 2006, Lund and Treue 2008, Vyamana 2009). In Study III, it was found that CBFM continues the East Usambaran 'tradition' of exclusionary conservation since colonial times, only this time on village land within the VFRs and implemented by the villagers. Study IV highlighted the role of both continued top-down influences by extra-communal actors as well as the power dynamics within the communities that work in favour of conservation-orientated management.

The reasoning behind the suggestion that context and history play a determining role for the outcomes of theoretically progressive policies is captured in the idea of path-dependency. That is, previous established rules and power relations condition the formation of new regimes; "*what was* and *what is* shapes *what can be*" (Brockhaus and Angelsen 2012: 22, emphasis original). In institutional reproduction, involved actors have the power to mold institutions to serve particular interests, and inefficient and/or inequitable outcomes may continue following regime change, as long as they are supported by an elite group that reaps benefits (Mahoney 2000: 517). Actors, including organizations, frequently find ways of holding on to their old power bases despite purported changes in roles and responsibilities, such as the current advisory and supportive tasks assigned to district and central governments in the CBFM policy, as opposed to the previous regulatory role. This resistance to institutional change has been characterized as 'stickiness', particularly relevant in the case of actors that are powerful enough to hold back reforms (Brockhaus and Angelsen 2012). It has even been claimed that the motivations of state forestry agencies are so deeply ingrained in the prerogatives and associated benefit streams inherited from colonial regimes, that no amount of training in the principles of community forest management or efforts to change attitudes will lead to the needed structural changes (Dove 1995: 327, Li 2007: 280).

What, then, are the means to break out of path-dependency – and what kinds of departures are even desirable to different actors in the case of CBFM in 'conservation landscapes' where the goals to protect global public goods collide with local livelihood needs? Li (2007) presents a persuasive analysis of practices of assemblage in community forestry. That is, diverse elements, discourses, institutions, actors and forms of expertise are brought together in varying ways to promote a certain solution, such as CBFM. Different actors assemble narratives of CBFM according to their conception of the problem – such as urgent needs to protect biodiversity, or a quest to restore 'effective' indigenous management of resources – and elements that do not fit that conception are dropped out of the narrative. This narrows down the analysis of the problem and subsequent proposals regarding the various forms that CBFM may take, filtered by power relations between the actors involved in planning and decision making (cf. Hajer 1993, 1995).

There is a discursive hegemony regarding the need to create benefits from forest conservation to local communities among virtually all major forestry and conservation actors in Tanzania, but those striving to develop approaches combining CBFM with sustainable forest use are in

the minority (Rantala 2012). Among foresters, the prevailing vision of participatory forest management is that of reduced dependence on forests, not forests as a valuable livelihood asset (Blomley et al. 2010). In the particular context of the East Usambaras, timber extraction is likely to be a sensitive issue, almost a taboo, or considered too complicated to be integrated sustainably with conservation, due to the scandals related to commercial logging in the 1970-80s and later illegal logging (Mwalubandu et al. 1991, Vihemäki 2009). Direct returns from most non-timber forest products are marginal compared to farming. Much hope is therefore placed in the potential of non-extractive activities that would sustain CBFM in the form of continued segregation of forests from human use, such as PES and REDD+. So far, such benefits have not materialized beyond pilot scale, and CBFM establishment, implementation and expansion is based on hopes of potential future benefits, conditional upon a global demand for the conservation services that the communities have to offer.

A seeming 'forest indifference' of the majority of the village populations, on the one hand, and politically active cliques forming the critical mass for forest collective action, on the other, emerge as characterizing features of the East Usambaran CBFM regimes in this study. In order to understand the sustainability of these regimes in the current absence of broader incentives, it appears important to pay attention to two things: the motivation of the critical mass to continue sustaining forest collective action, and the legitimacy of this action by the village constituencies.

This study found no evidence to suggest that the critical mass consisted of wealthier villagers better able to bear the transaction costs of CBFM because of a tangible benefit in sight (cf. Oliver et al. 1985, Baland and Platteau 2007). Rather, the costs associated with management currently outweigh the direct benefits. Instead, the incentives of the active group seem to be derived from political capital and social ties that are reinforced through active participation. The expectations of future benefits from current political and civic activity are not merely theoretical. For instance, experiences from the targeting of TASAF, Tanzania's Social Action Fund, which funds community-driven development projects throughout the country, suggest that politically and civically active people have benefited disproportionally from the program. This applies to both the application-submitting communities as well as the distribution of beneficiaries within the communities (Baird et al. 2009). Enhanced access to information through existing ties to NGOs and government officials is likely to improve the position of politically and civically active villagers to benefit from new programs and emerging opportunities.

The normative legitimacy of current CBFM action appears compromised by the quality of deliberation and representation in the decision and rule making processes, as well as the accountability measures practically available to the villagers, severely constrained by access to information. Study IV drew attention to the potential risks associated with contested legitimacies and coercive practices to compensate for legitimacy deficits in village forest regimes. A central reservation relates to the costliness of coercion; people's expectations of the consequences of non-compliance require continuous and repetitive reinforcement (Swartz and Jordan 1980). This requires resources, which the village forest committees are currently struggling with (Study III). Furthermore, a continued focus on enforcing rules regarding the

reserved areas at the expense of attention to the surrounding land use matrix may lead to intensifying exploitation and relative forest product scarcity elsewhere, finally increasing pressures to exploit the reserves. Forest committees and guards are then easily outnumbered by potential users (cf. Li 2007).

The two observations – the empowerment and potentially enhanced access to benefits by those who do participate, versus the political and civic apathy of the majority – seem to suggest that key to increasing equality of opportunities from CBFM and the gradual breaking out of inequitable regime paths is the general strengthening of human and social capital, with specific efforts directed at the marginalized strata of communities and the society. This is naturally a broader question than may be addressed within the forest sector or in the context of individual projects alone, but extremely relevant for the planning of new initiatives to reward local people for forest conservation. For example, the policy debate in Tanzania leans heavily towards communal rewards for REDD+ (Rantala 2012), and the current study has highlighted the associated risk of elite capture of such benefits. In general, the more value is added to a resource, the more likely it is to attract the interest of powerful actors. Thus, concerns that REDD+ might offer a significant incentive to recentralize forest governance (Phelps et al. 2010, Sandbrook et al. 2010, Larson 2011) or, in less obvious ways, increase the 'stickiness' of government agencies in implementing democratic decentralization are probably not unjustified. Furthermore, if communities have been disadvantaged to benefit from their devolved forest rights because of inadequate powers (resources) to utilize forest resources (e.g. Ribot 2002), non-extractive benefits from forests may be even more elusive in being heavily dependent on access to expert knowledge on, for instance, carbon finance.

It seems that there is no way around the issue of improved access to knowledge and education to truly democratize forest decision making, and to increase the legitimacy and equity of local forest-based initiatives. Conducive institutional structures for public participation and democratic governance, such as those associated with the Tanzanian local government, land and forest decentralization, remain ineffective as long as the majority of the population does not possess the capacities and resources to claim and exercise their procedural rights. But, as many forest conservation actors are aware (Li 2007), there is no guarantee that increasing democracy in community forestry will lead to ecologically optimal outcomes, which may make donors, conservationists and governments hesitant to fully commit to the idea of empowerment in democratic decentralization. As long as that is the case, the form of CBFM implementation and the subsequent balance of conservation and social benefits will always be determined outside of the forest adjacent communities, regardless of the rights defined by law and policy.

6. Conclusions and Recommendations

The current study offers several points for consideration in the planning of the 'next wave' of forest conservation instruments in Tanzania and potentially beyond. While in many ways the Derema case was an imperfect example to say definitely that personal payments for the taking of resource rights do not work, it did highlight some of the risks involved and critical factors for such schemes in the developing tropics. Defining rights to property and compensation in dynamic legal pluralist settings is complex. Outcomes are further conditioned by the structures and modalities of negotiating and claiming compensation, and the varying agency of different actors in these processes. Polycentric project settings, with unclear loci of responsibilities, make interventions susceptible to disruptions and delays in implementation, with the associated appreciation of resources and depreciation of compensation, impeding effective restitution of lost resources. Furthermore, the impacts of cash compensation on post-displacement livelihood rehabilitation are sensitive to the capacities of recipients, and not the adequate form of compensation, especially as the sole method of compensation, in all cases. Addressing these issues seriously in order to achieve equitable mitigation of negative social impacts of displacement is likely to be resource intensive.

The studies on the outcomes and processes of CBFM in the context of democratic decentralization may inform the planning of communal rewards for conservation services, such as those related to PES or REDD+. To enhance the legitimacy and sustainability of CBFM regimes, and to increase the equity of opportunities among local actors to benefit from them, the issues of deliberation, representation and accountability are central – at the community level as well as between levels of governance. Conducive institutional structures alone are not enough, but concerted efforts are needed to enhance people's awareness of their procedural and substantive rights. This observation is obviously valid for governance processes involving all types of conservation interventions and opportunities to benefit from conservation and development in general.

Can it be said which of the studied conservation approaches has the tendency to result in better social outcomes – or at least succeed better in mitigating harm? In the East Usambaran context, community-based processes, even if still influenced by external actors, appear to enjoy broader legitimacy among the concerned population than the large-scale land appropriations for conservation that have a rather bleak social track record. The impacts of CBFM have been more 'democratic', too, in that the negative livelihood impacts have been relatively minor compared to, for example, those of the Derema corridor establishment, and not concentrated on certain already disadvantaged groups. While shortcomings in the input legitimacy of CBFM processes were observed, the theoretical predispositions for broader participation and benefits are there in the building blocks of the policy, awaiting full harnessing of the opportunity.

A key observation is that while the scope of the social impacts of CBFM has been narrower than that of the government protected areas, the ecological impacts of the two approaches – outside of the focus of the current study – are yet to be demonstrated. Ecological effectiveness, especially the attainment of biodiversity conservation goals in the current

context, will by default determine the viability of different conservation approaches at least as much as their social performance. A multi-faceted, cross-disciplinary evaluation may inform the identification of a suitable mix of policies for people and biodiversity. The practical combination and implementation of the policy mix should ideally be subjected to inclusive and equitable negotiation among all landscape stakeholders in order to achieve – if not win-wins – more legitimate compromises.

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